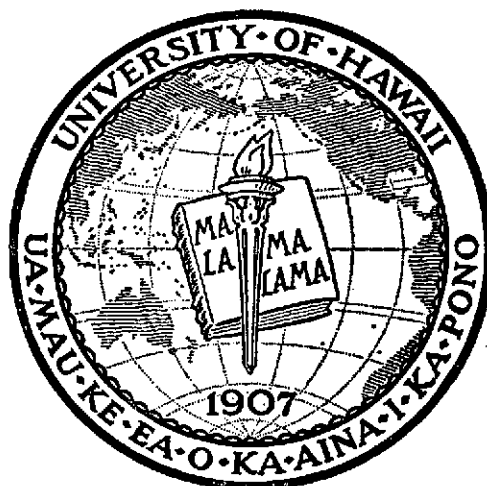


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# ATLAS OF ZENITH AIRGLOW PLOTS

OBTAINED AT  
HALEAKALA, HAWAII  
VOLUME 1. JULY 1961 to DECEMBER 1964

WALTER R. STEIGER  
Department of Physics & Astronomy  
University of Hawaii  
Honolulu, Hawaii 96822

LeROI L. SMITH  
Battelle Memorial Institute  
Pacific Northwest Laboratories  
Richland, Washington 99352

N & R-12-001-001

(NASA-CR-139377) ATLAS OF ZENITH AIRGLOW  
PLOTS OBTAINED AT HALEAKALA, HAWAII.  
VOLUME 1: JULY 1961 TO DECEMBER 1964  
Final Report (Hawaii Univ.)  
\$13.00

200 P HC

CSCL 04A 63/13

Unclas  
45439

N74-29716

# ATLAS OF ZENITH AIRGLOW PLOTS OBTAINED AT HALEAKALA, HAWAII

Volume 1. July 1961 to December 1964

Volume 2. January 1965 to January 1969

This Atlas presents zenith airglow intensities as a function of time as observed from Haleakala, Hawaii. Information concerning the location, instrumentation, and data reduction techniques is given in a separate volume: CATALOG AND DATA SUMMARY OF AIRGLOW OBSERVATIONS OBTAINED AT HALEAKALA, HAWAII.

The following comments will assist in interpreting the plots:

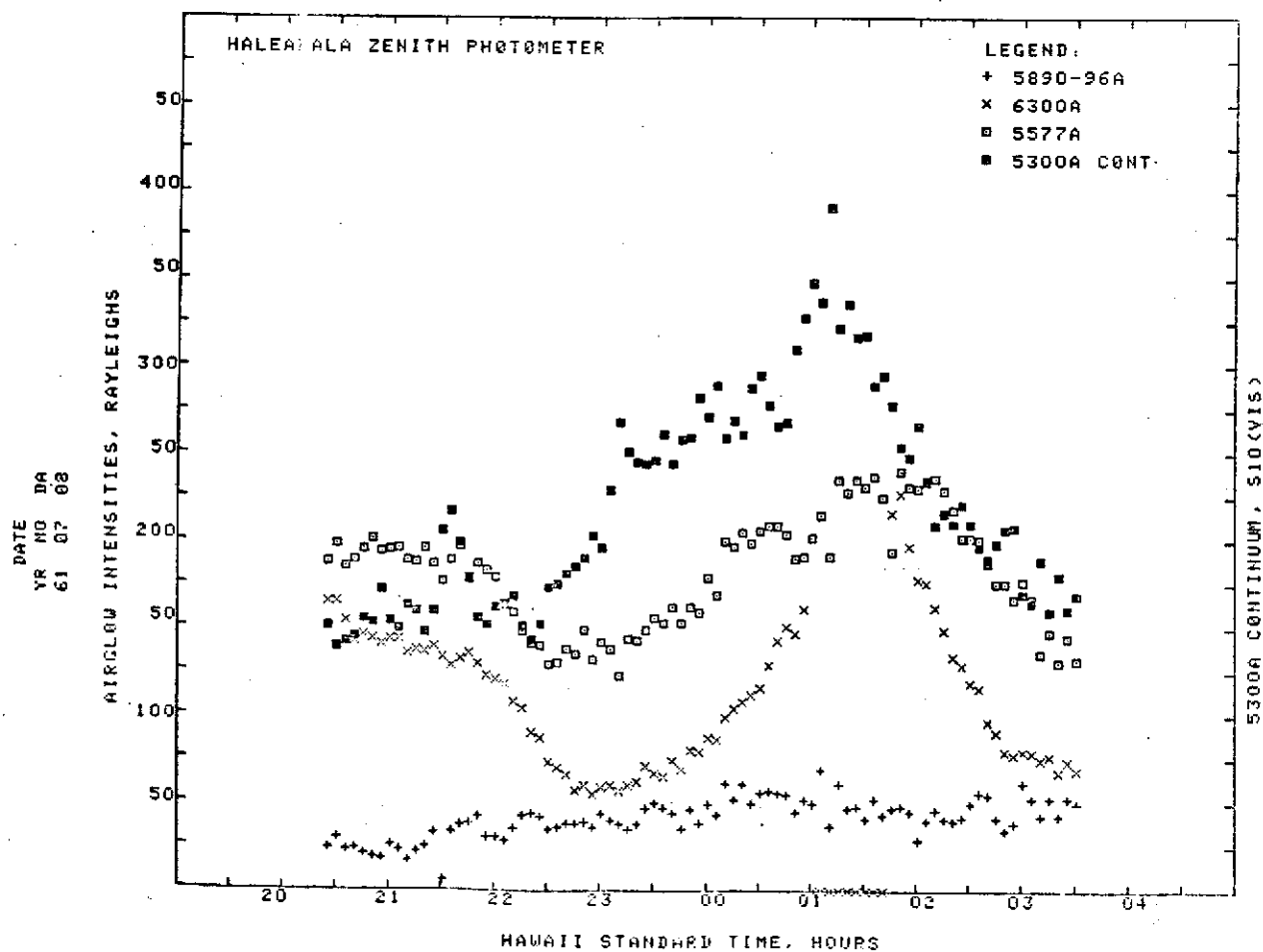
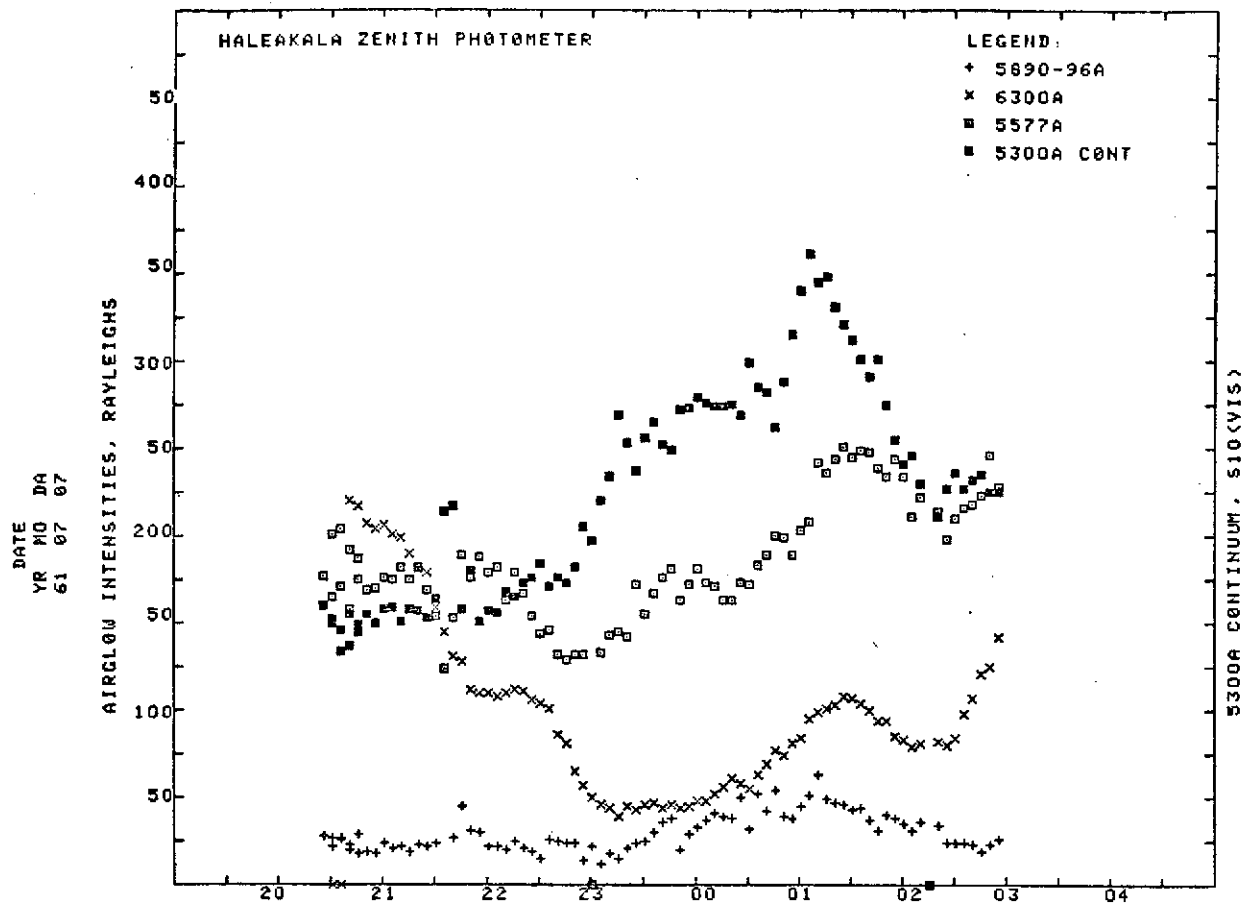
1. The date given on the left-hand margin is always the date of the beginning of the night. It is understood, of course, that the date changes at midnight.

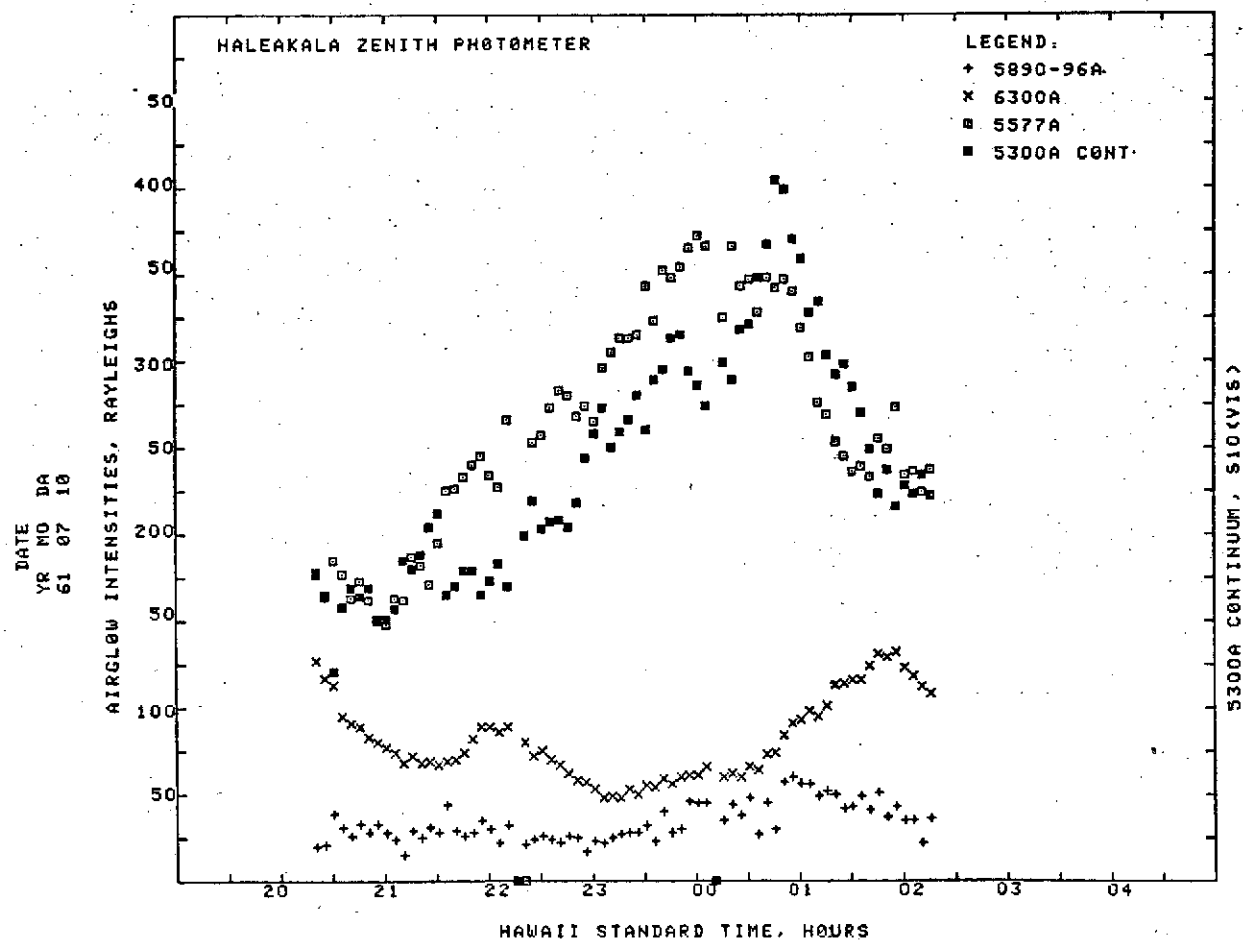
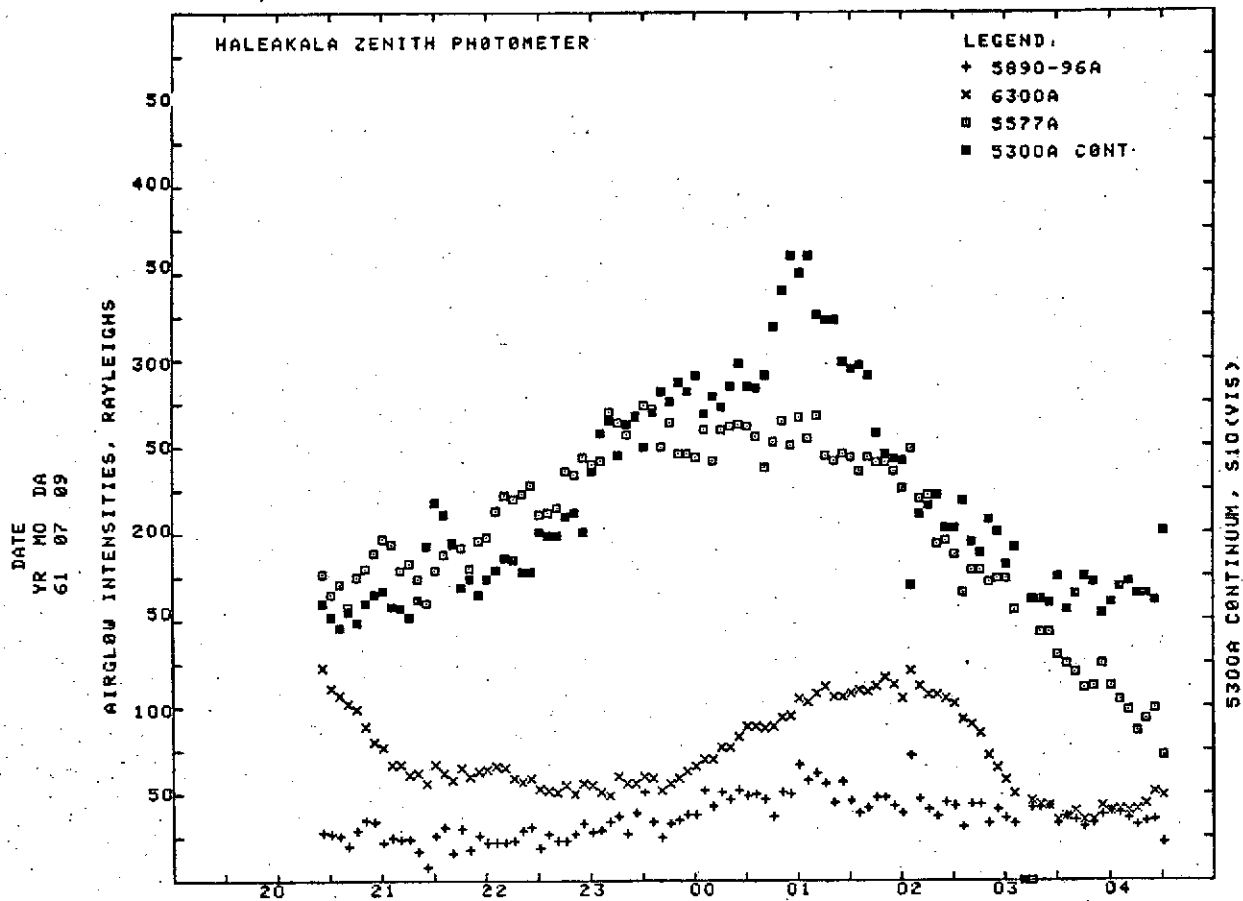
2. The left-hand ordinate scale, in rayleighs, is to be associated with the atomic emissions at 6300, 5577, and 5890-96 Å. The right-hand ordinate scale is to be associated with the continuum at 5300 Å and runs from 0 to 500  $S_{10}(\text{vis})$  units. ( $1 \text{ R/A} = 227 S_{10}(\text{vis})$  at 5300 Å)

3. Off-scale points are plotted by first subtracting 500; that is, the abscissa becomes 500 instead of zero.

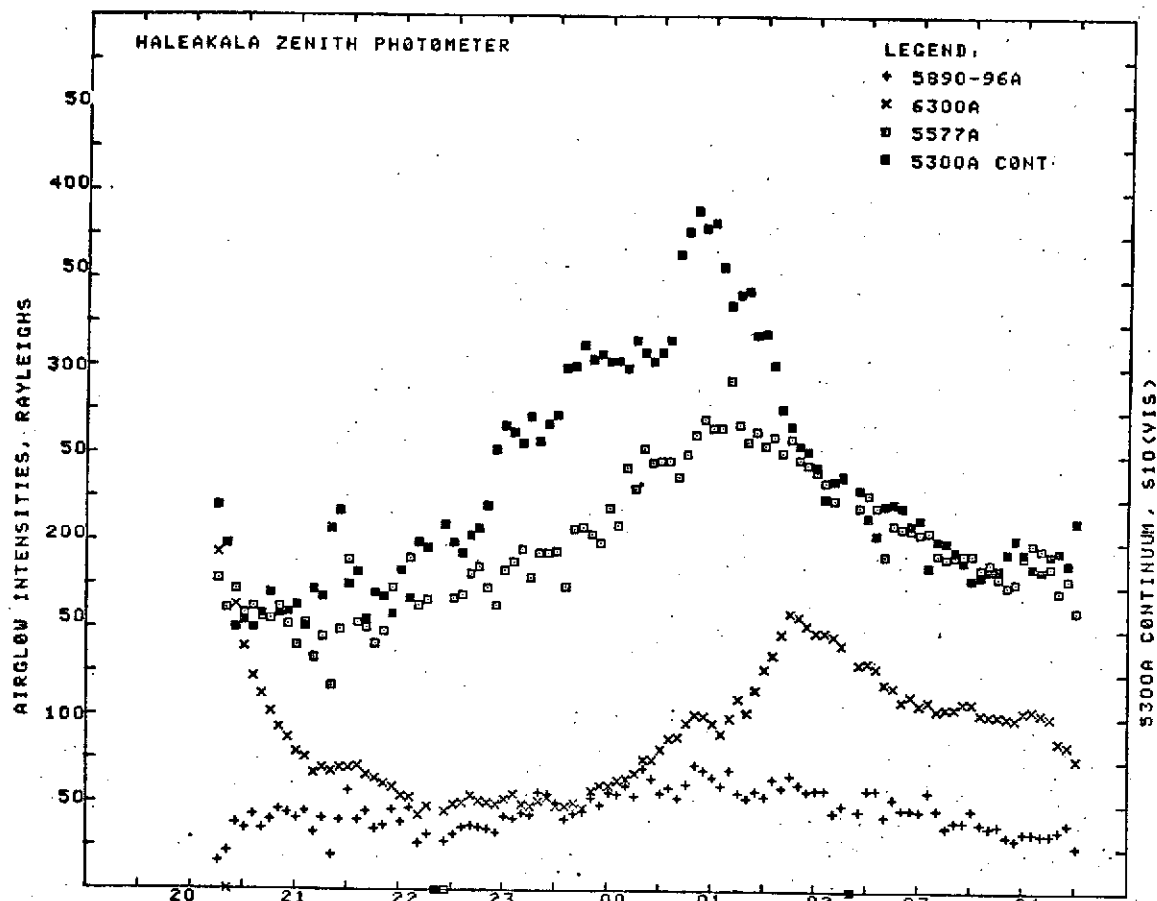
4. A large contribution to the 5300 Å continuum is the integrated starlight of the Milky Way, and the two crossings of the Milky Way can be easily seen on the plots. The star Arcturus also passes directly through the zenith at Haleakala and gives a strong deflection. See for example the plot for 61-09-05. One crossing of the Milky Way occurs at about 2115 HST (the peak is about 515  $S_{10}$  units) and Arcturus appears at about 0300 HST. On each successive day the zenith passage of the Milky Way and Arcturus occur about 4 minutes earlier. Because of the method of data reduction, the calculated intensities of the airglow emissions are not very reliable during the passage of Arcturus.

5. Nights having less than two hours of observations have been omitted from this Atlas.

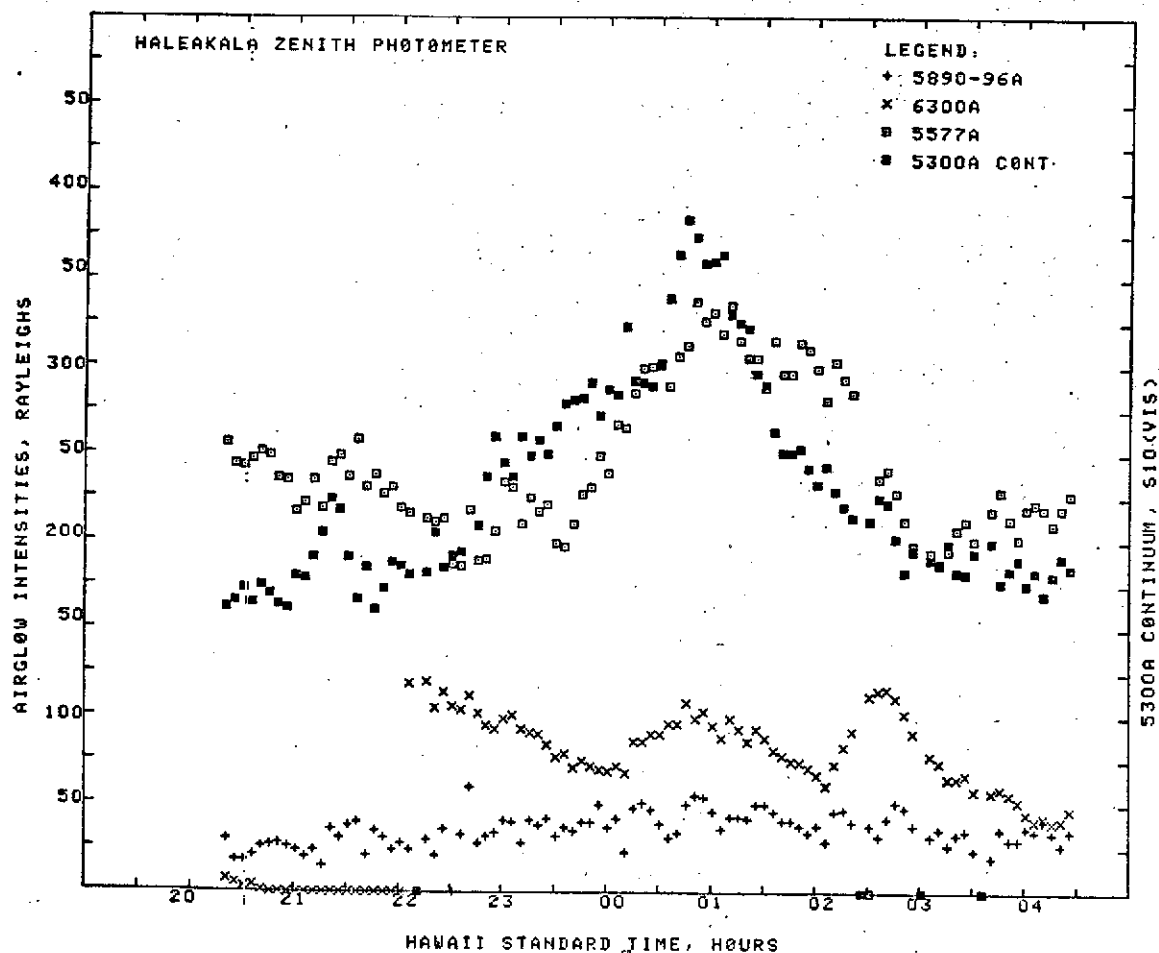


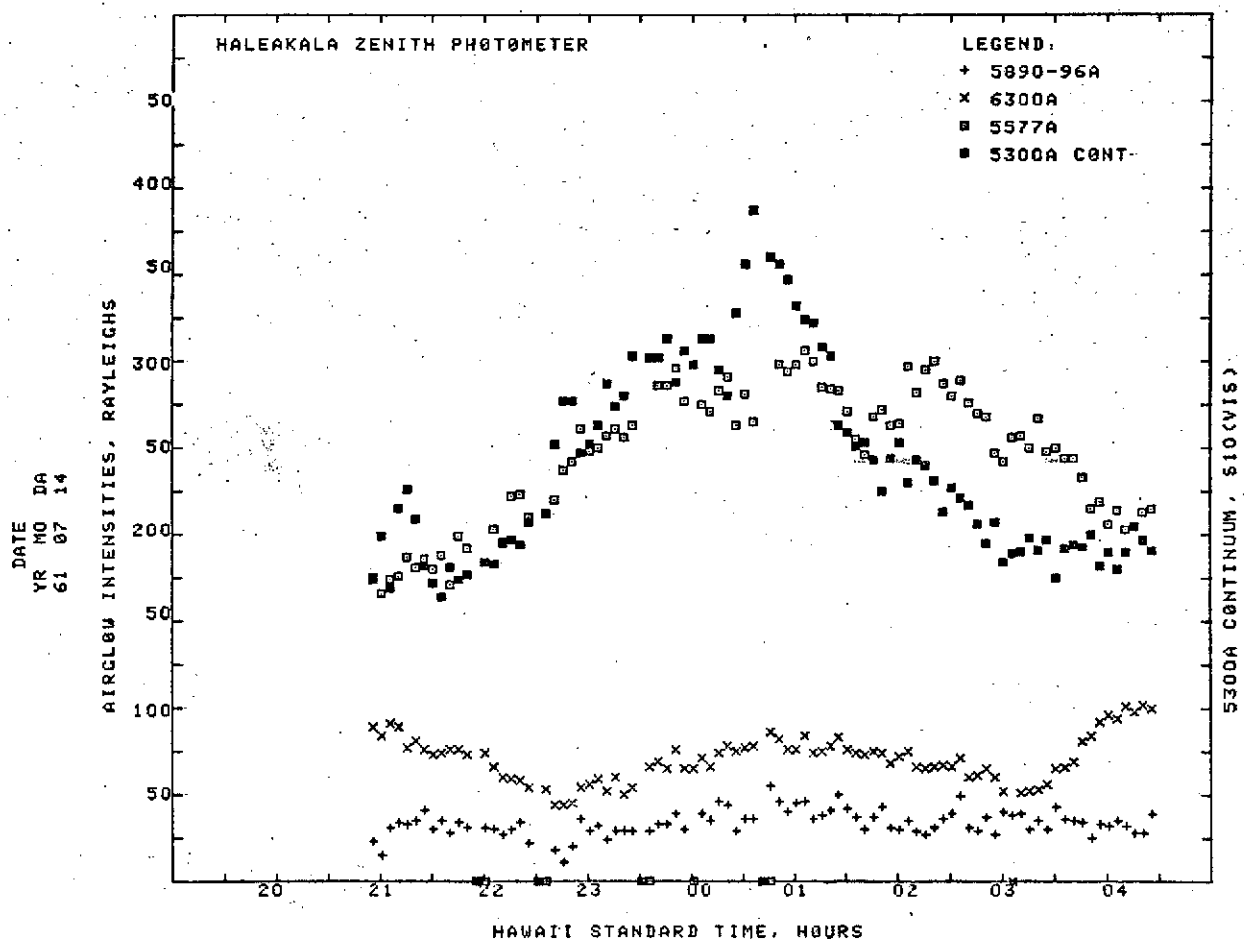
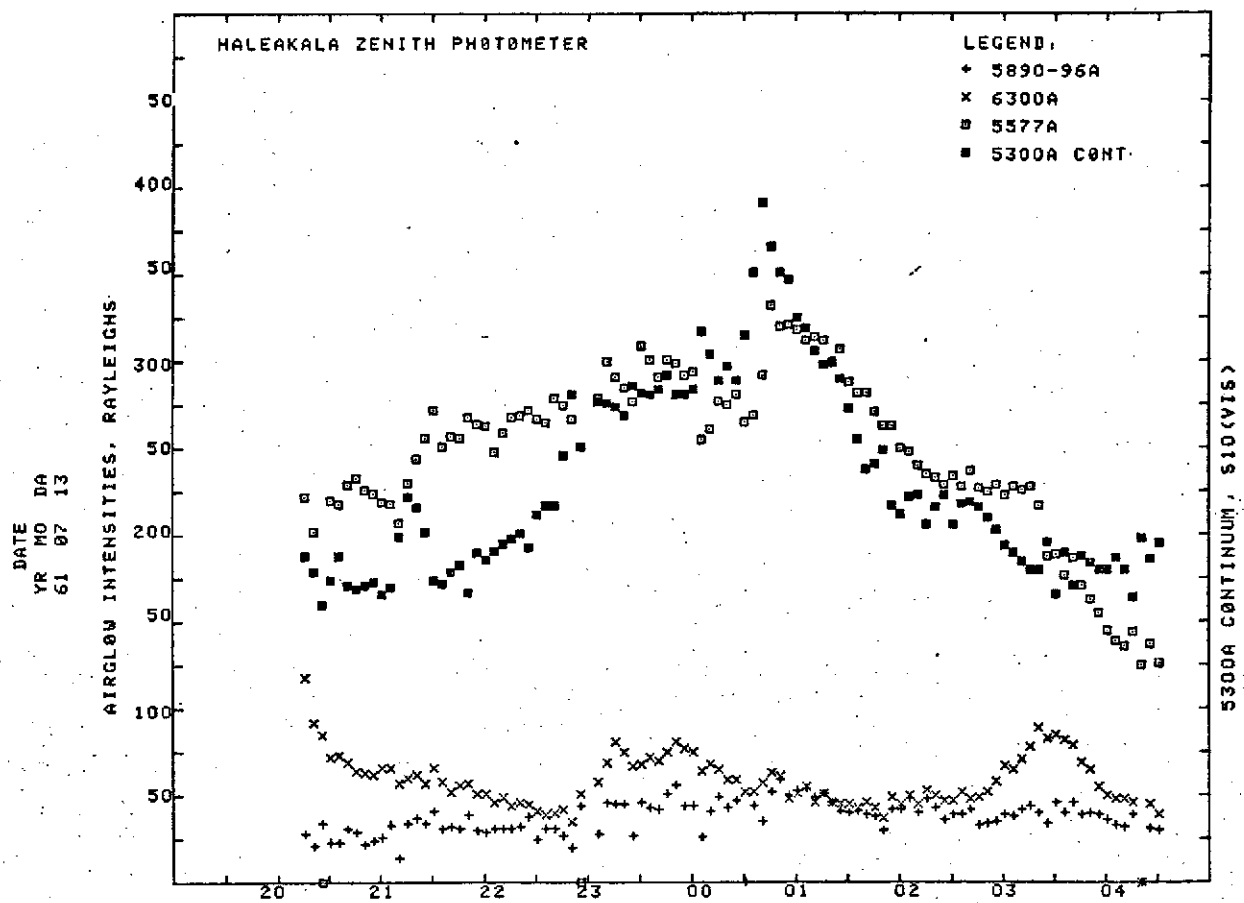


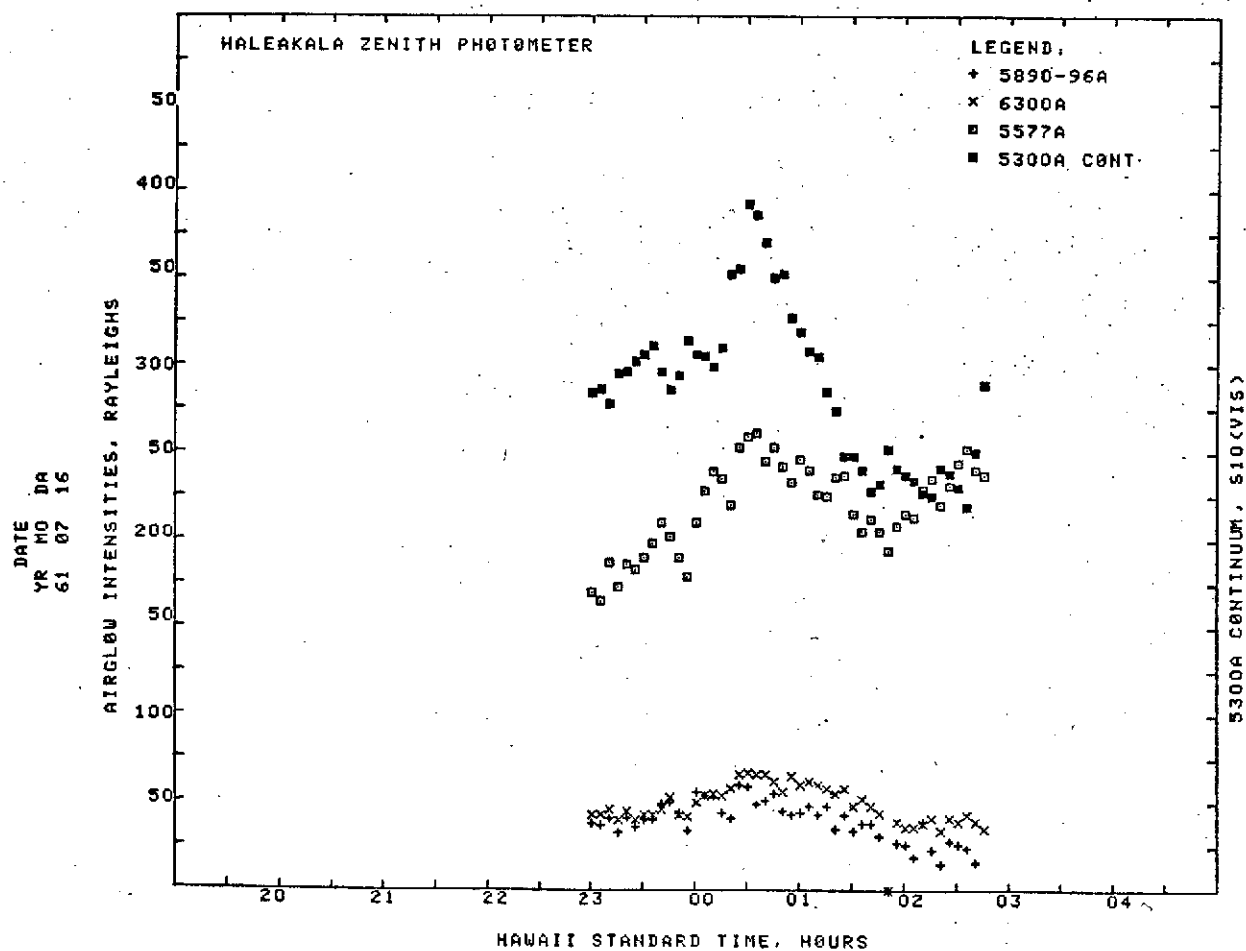
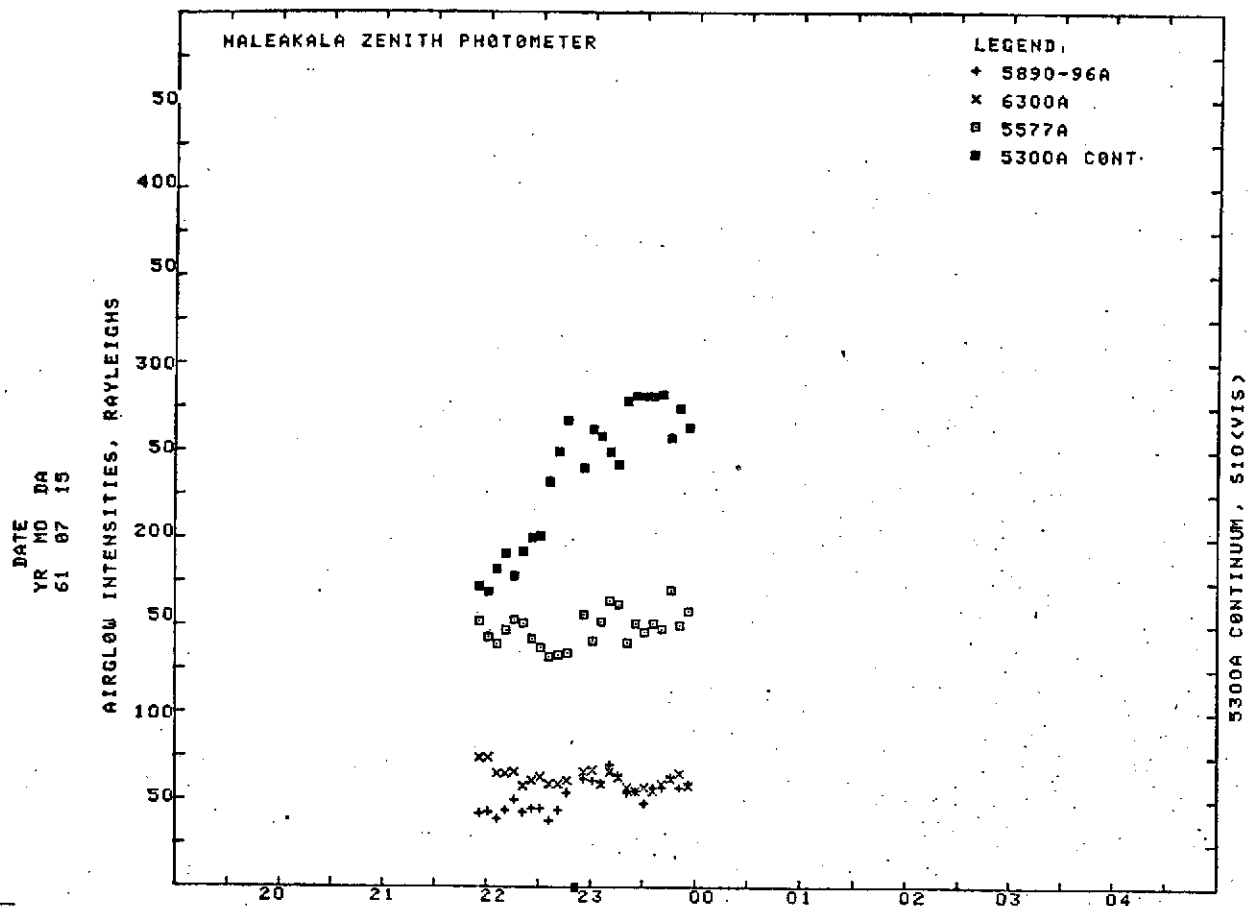
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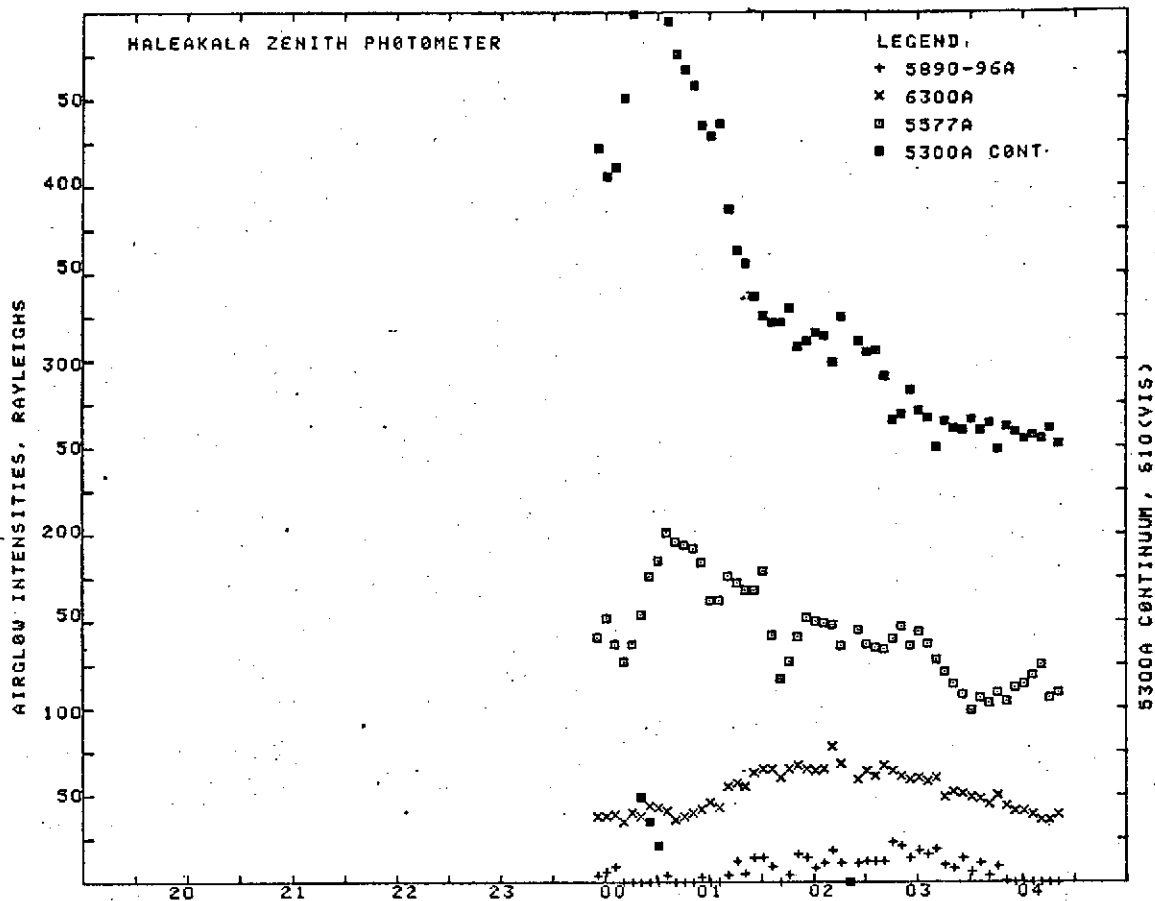
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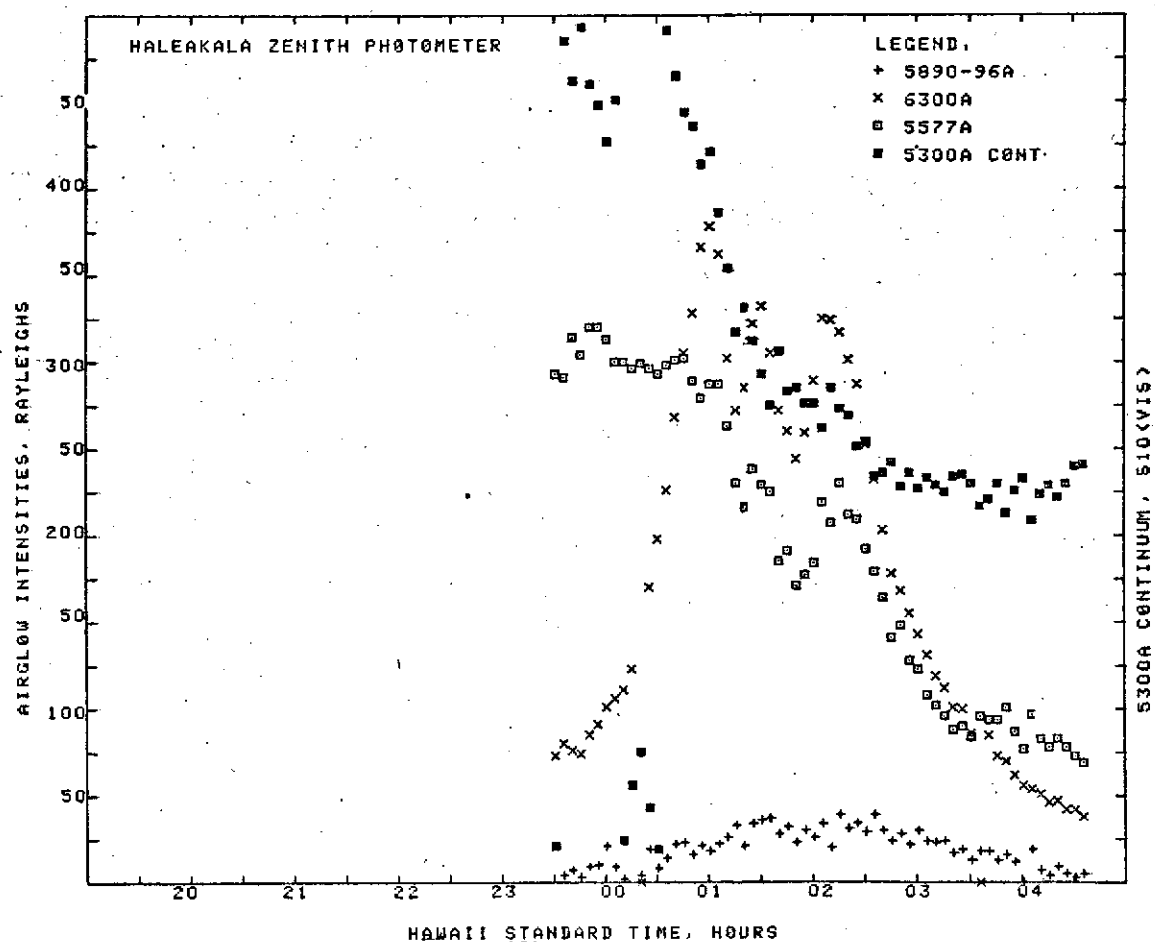




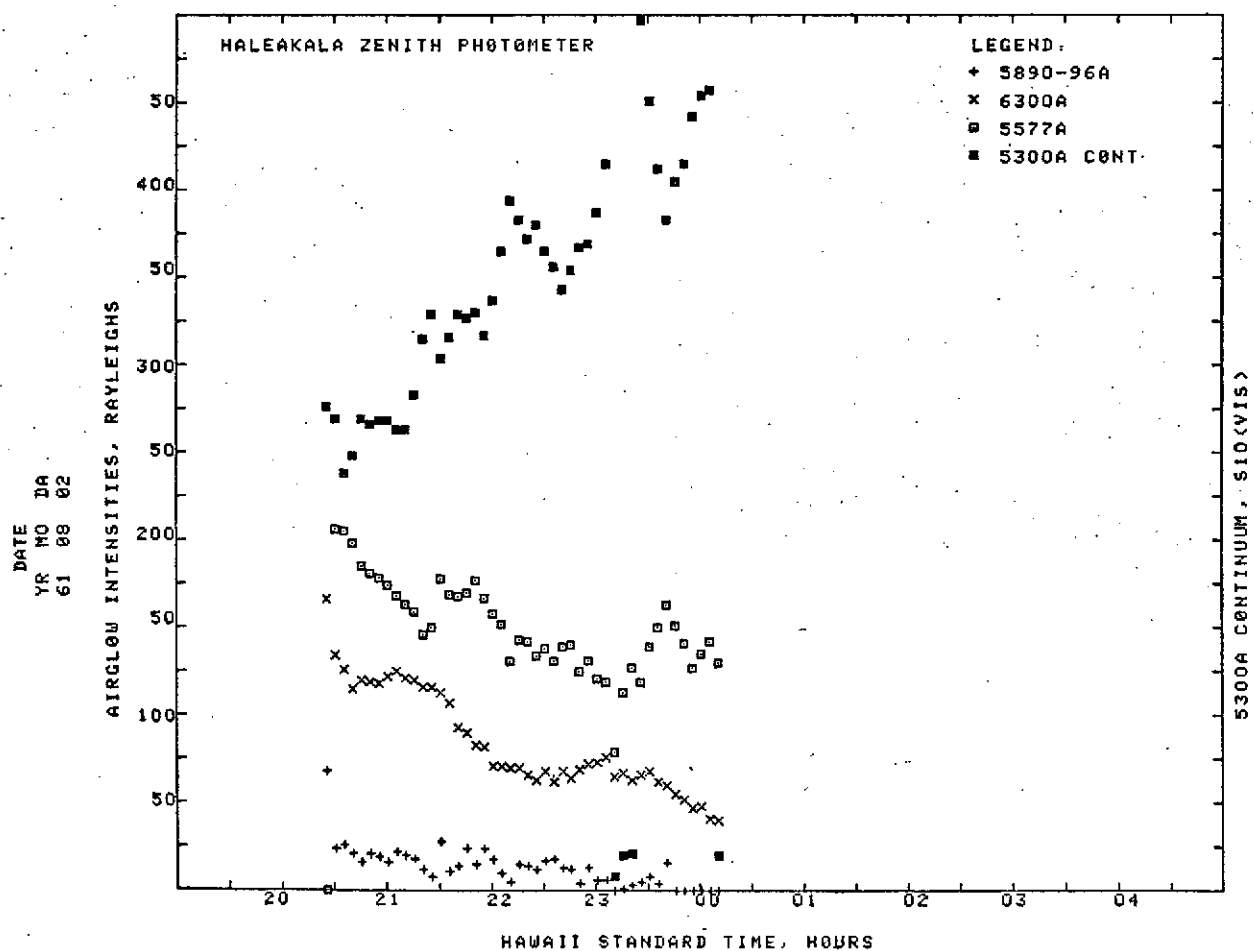
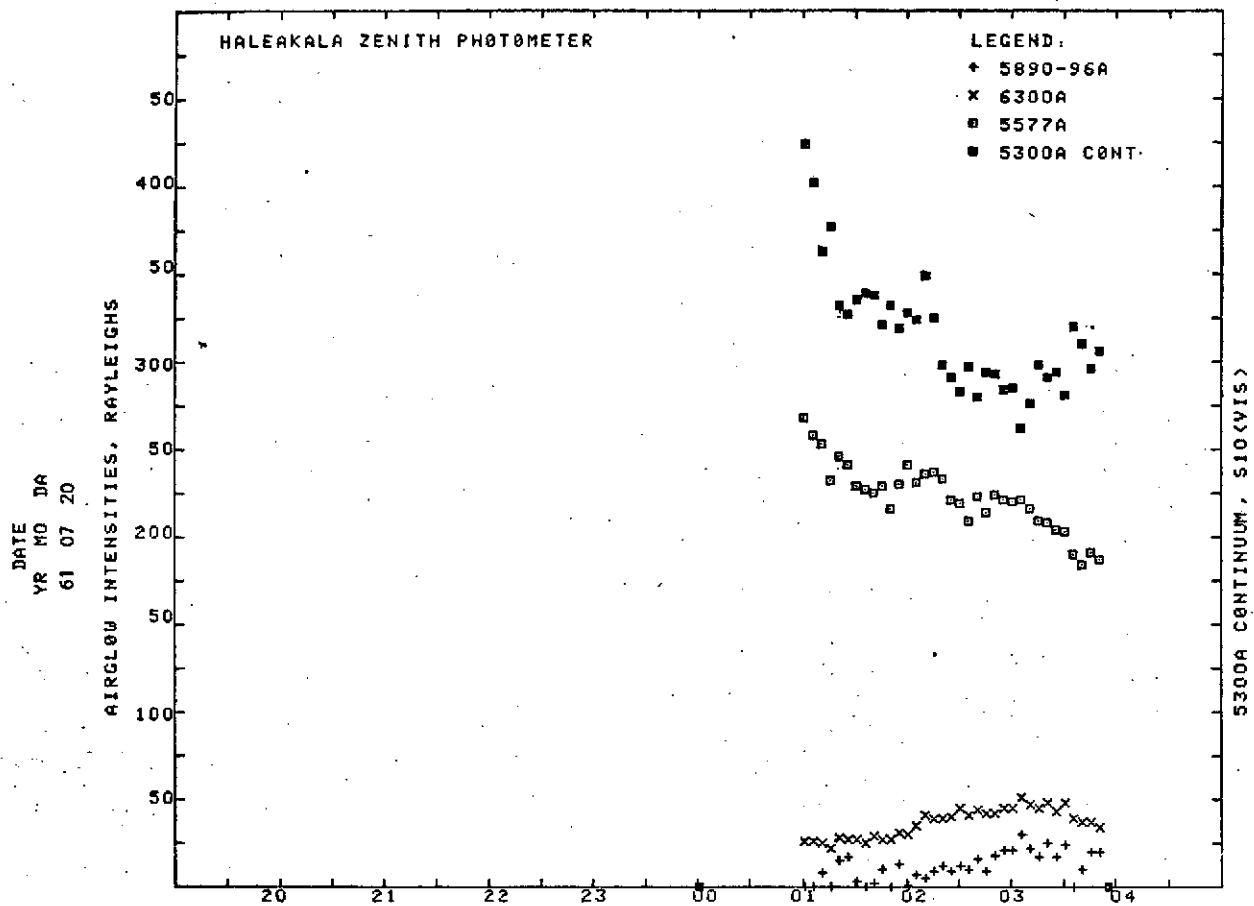
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DATE  
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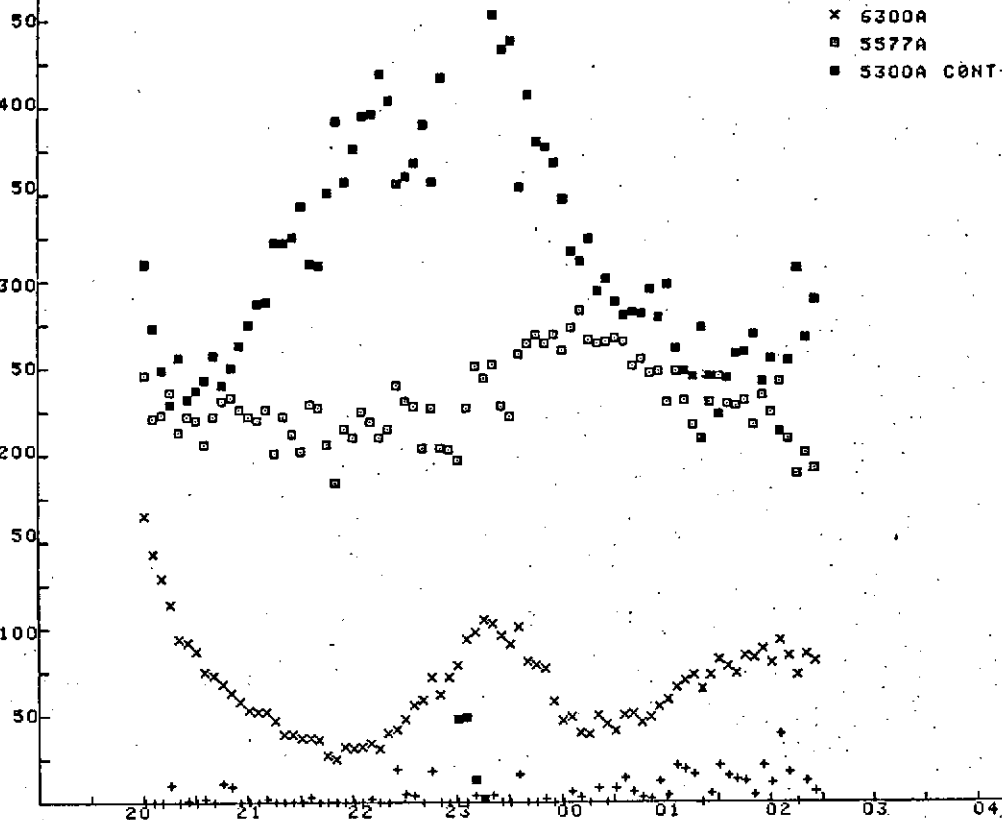


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AIRCLOW INTENSITIES, RAYLEIGHS

HALEAKALA ZENITH PHOTOMETER

LEGEND:  
+ 5890-96A  
x 6300A  
□ 5577A  
■ 5300A CONT.



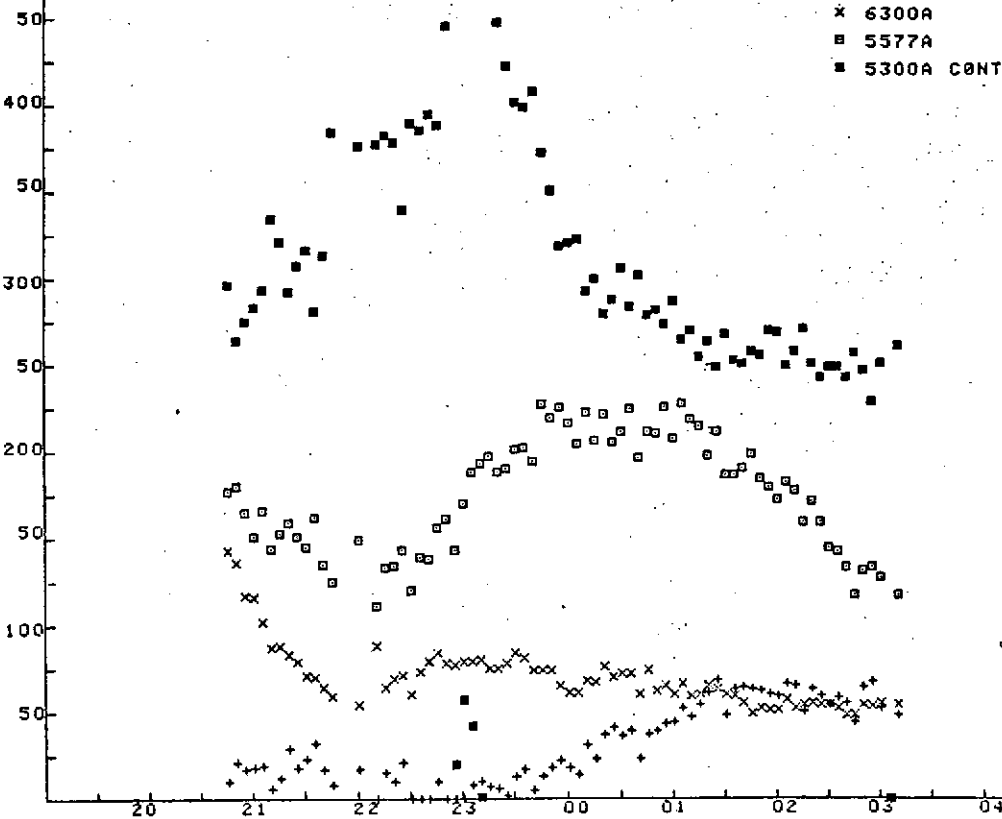
5300A CONTINUUM,  $510\langle VIS \rangle$

DATE  
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AIRCLOW INTENSITIES, RAYLEIGHS

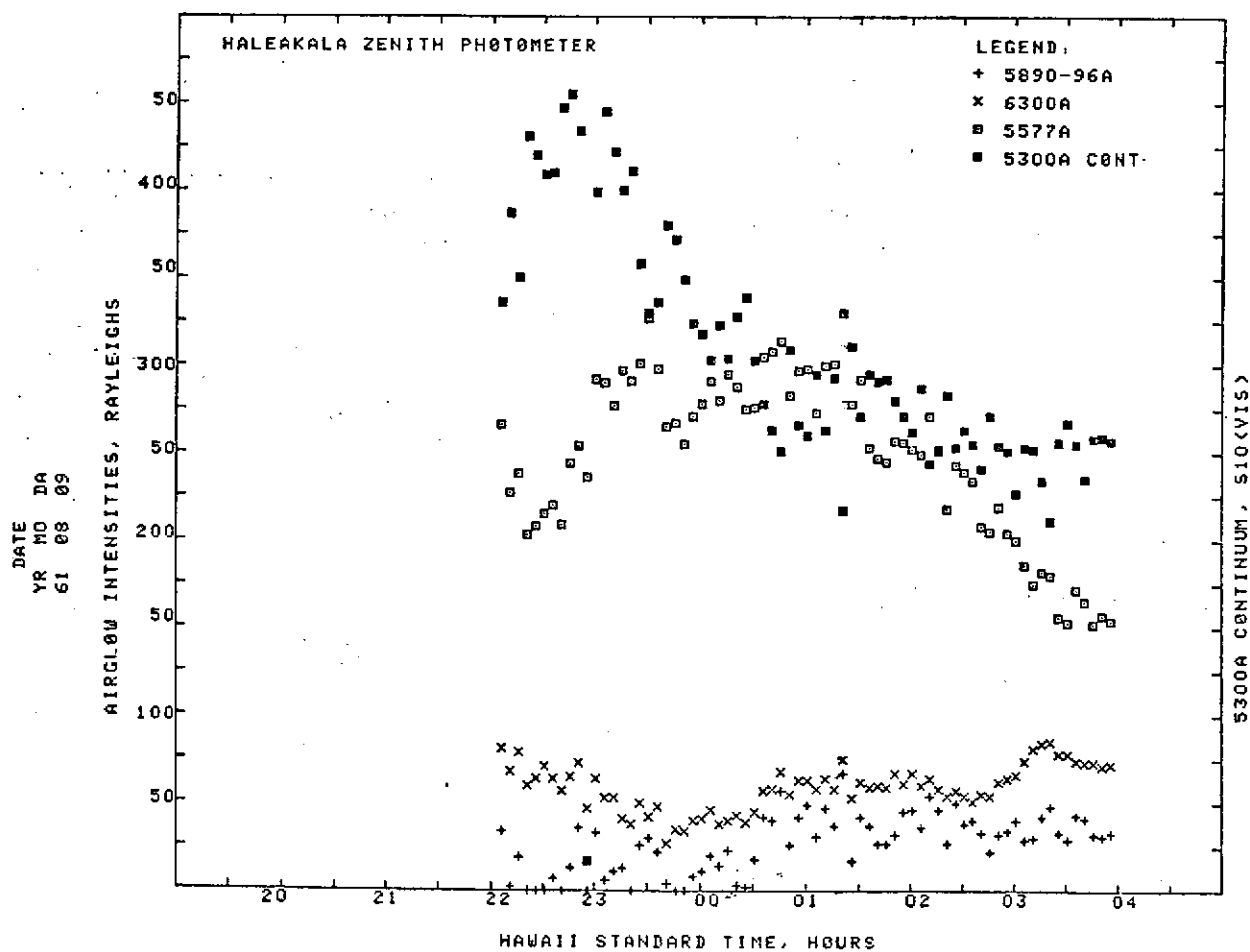
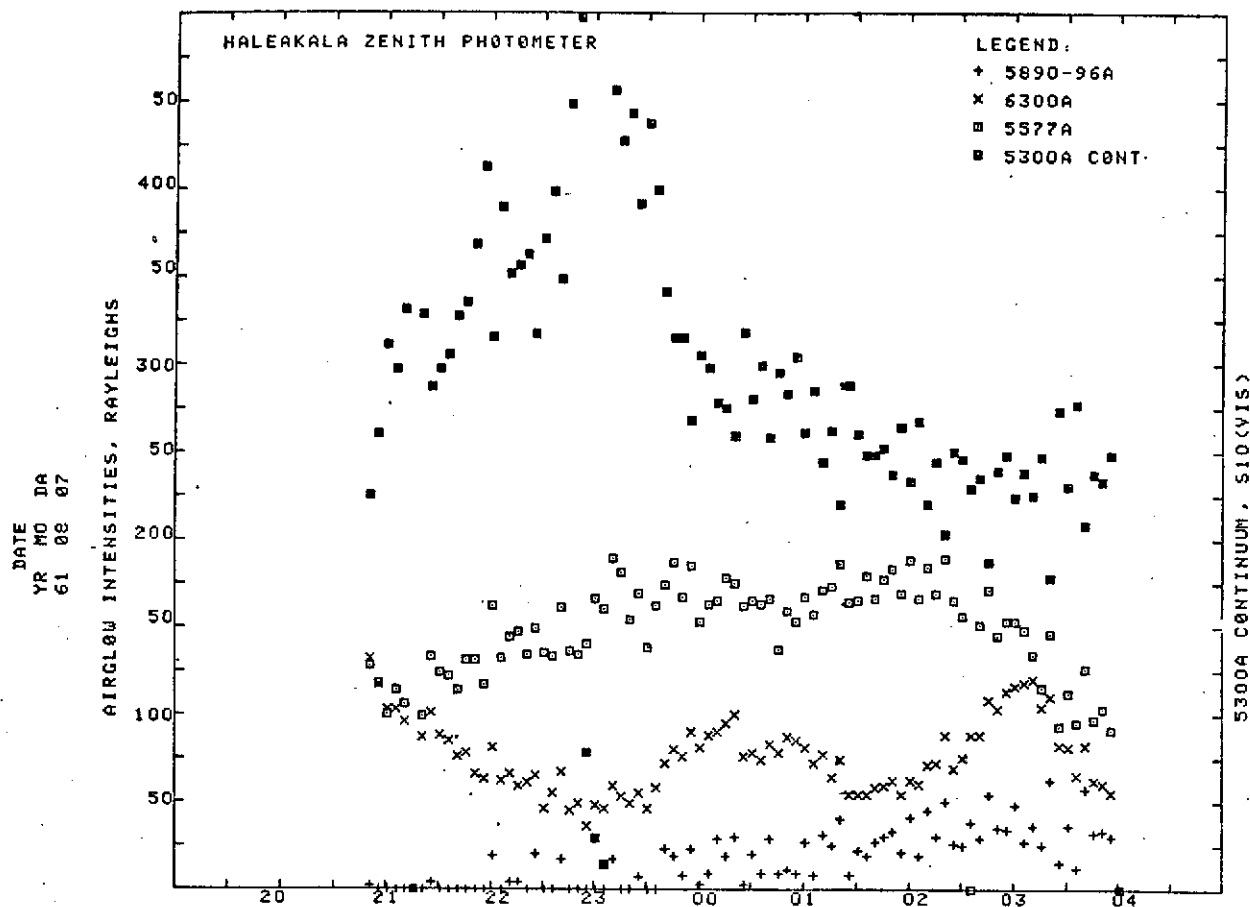
HALEAKALA ZENITH PHOTOMETER

LEGEND:  
+ 5890-96A  
x 6300A  
□ 5577A  
■ 5300A CONT.



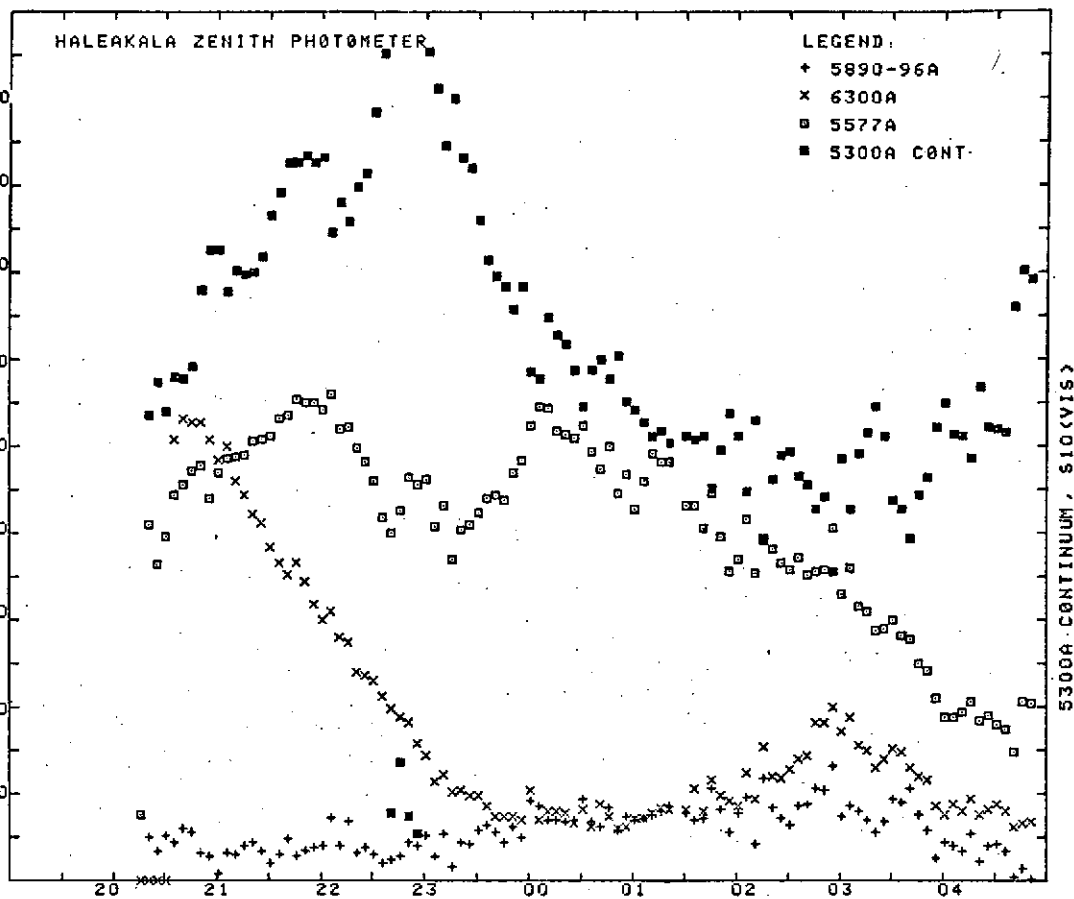
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HAWAII STANDARD TIME, HOURS



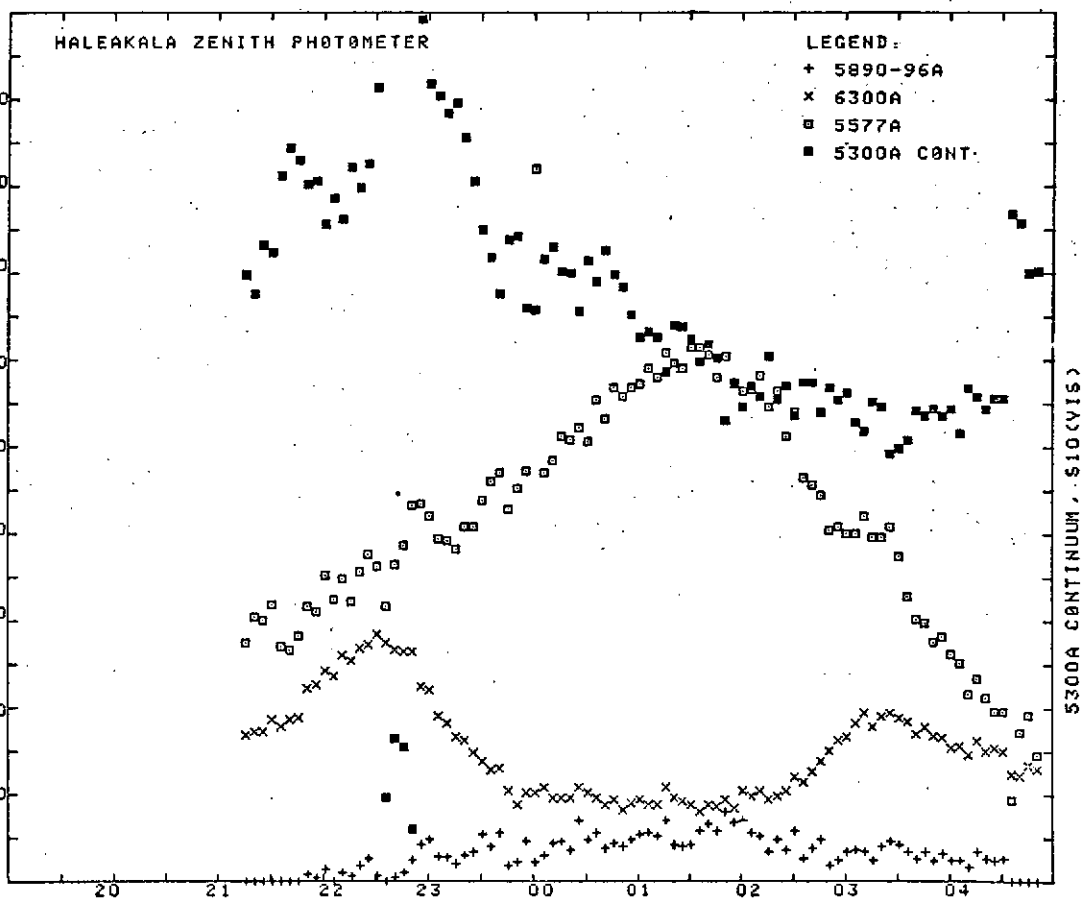
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AIRGLOW INTENSITIES, RAYLEIGHS

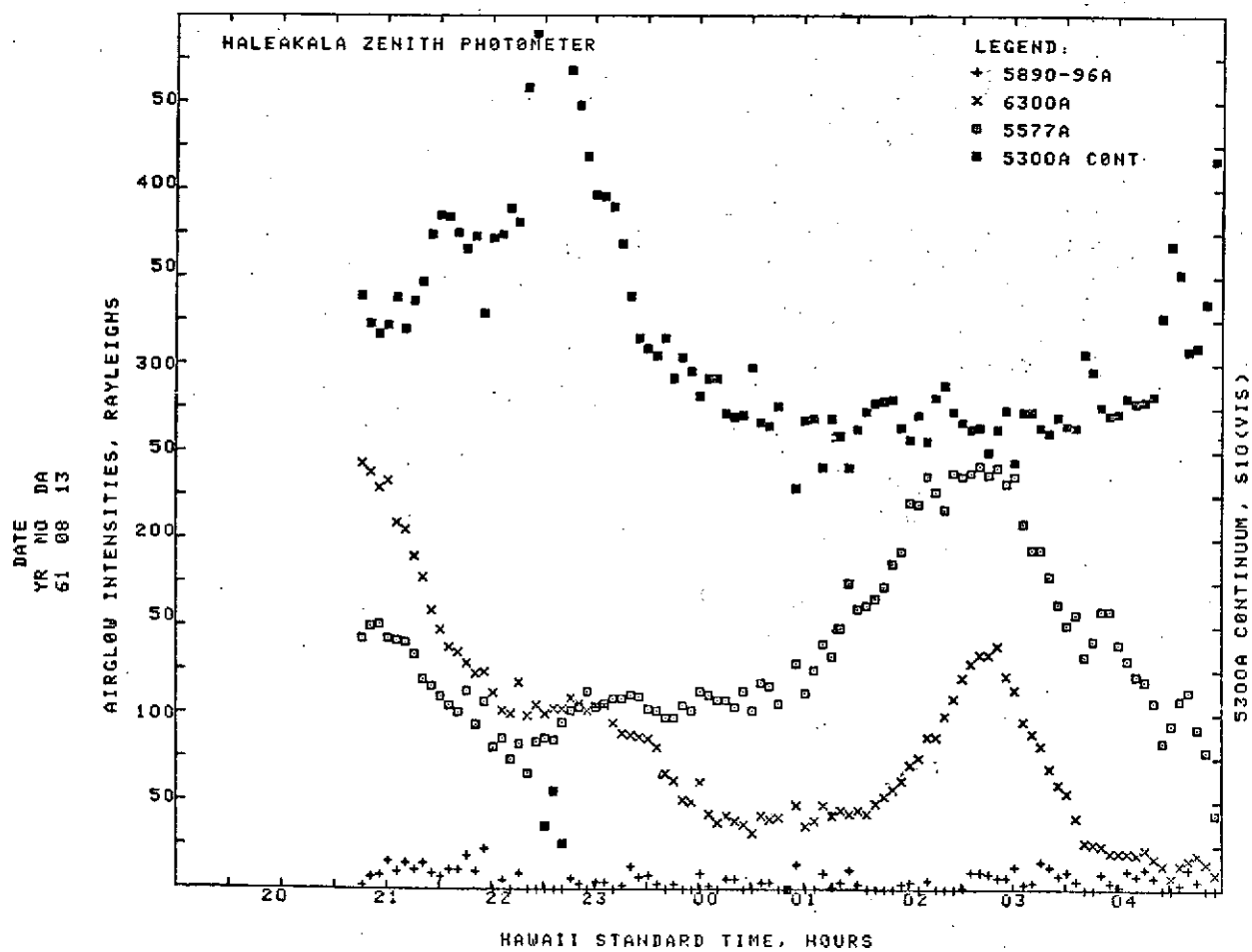
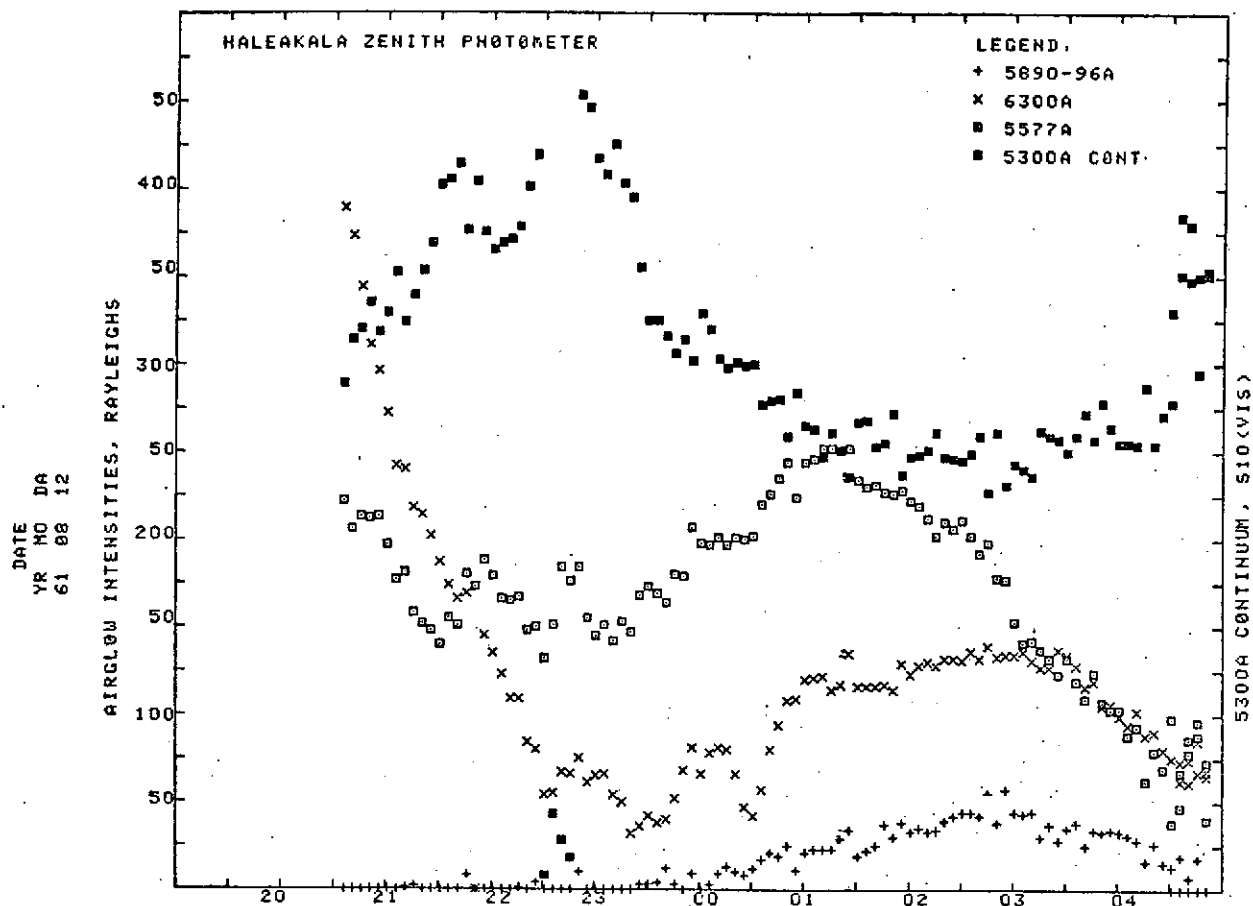


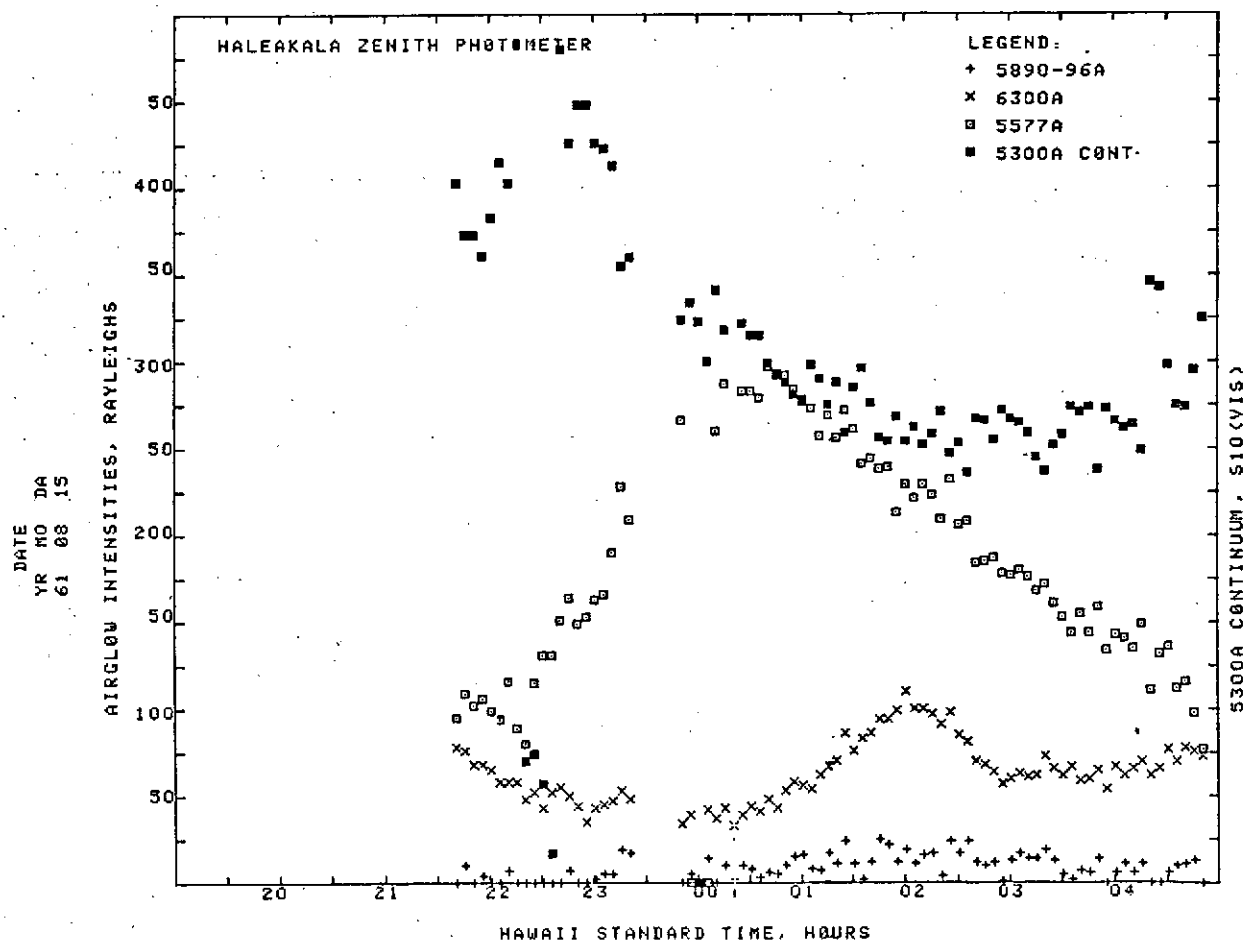
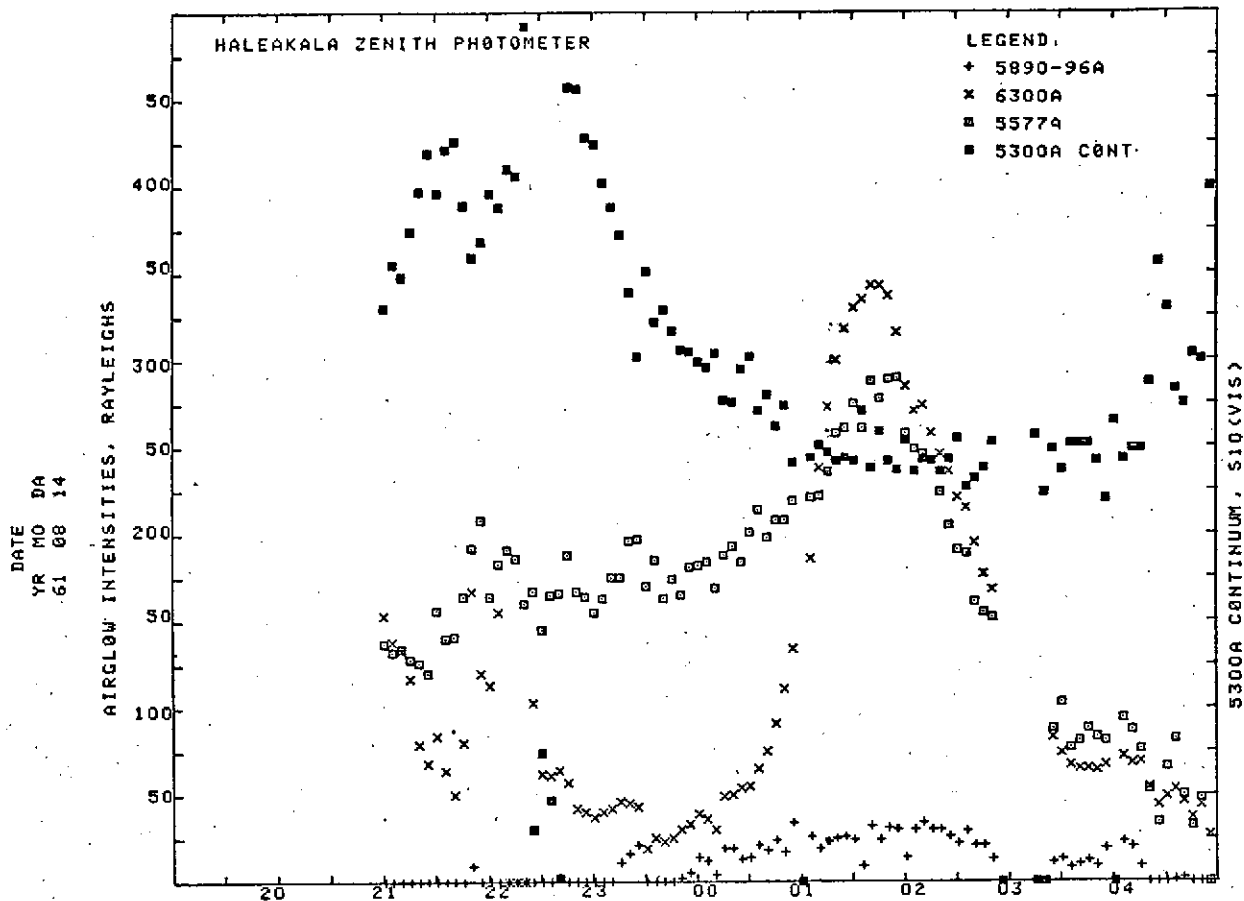
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AIRGLOW INTENSITIES, RAYLEIGHS

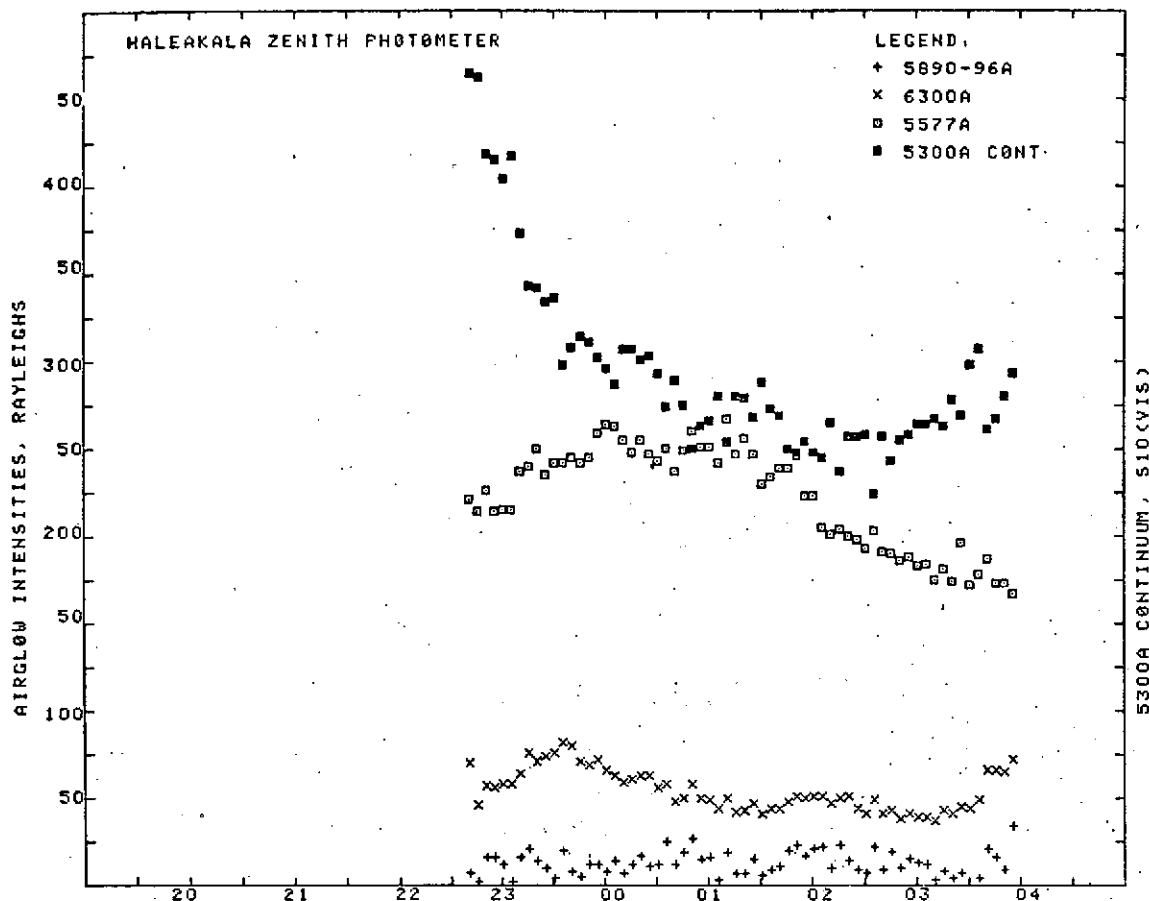


HAWAII STANDARD TIME, HOURS

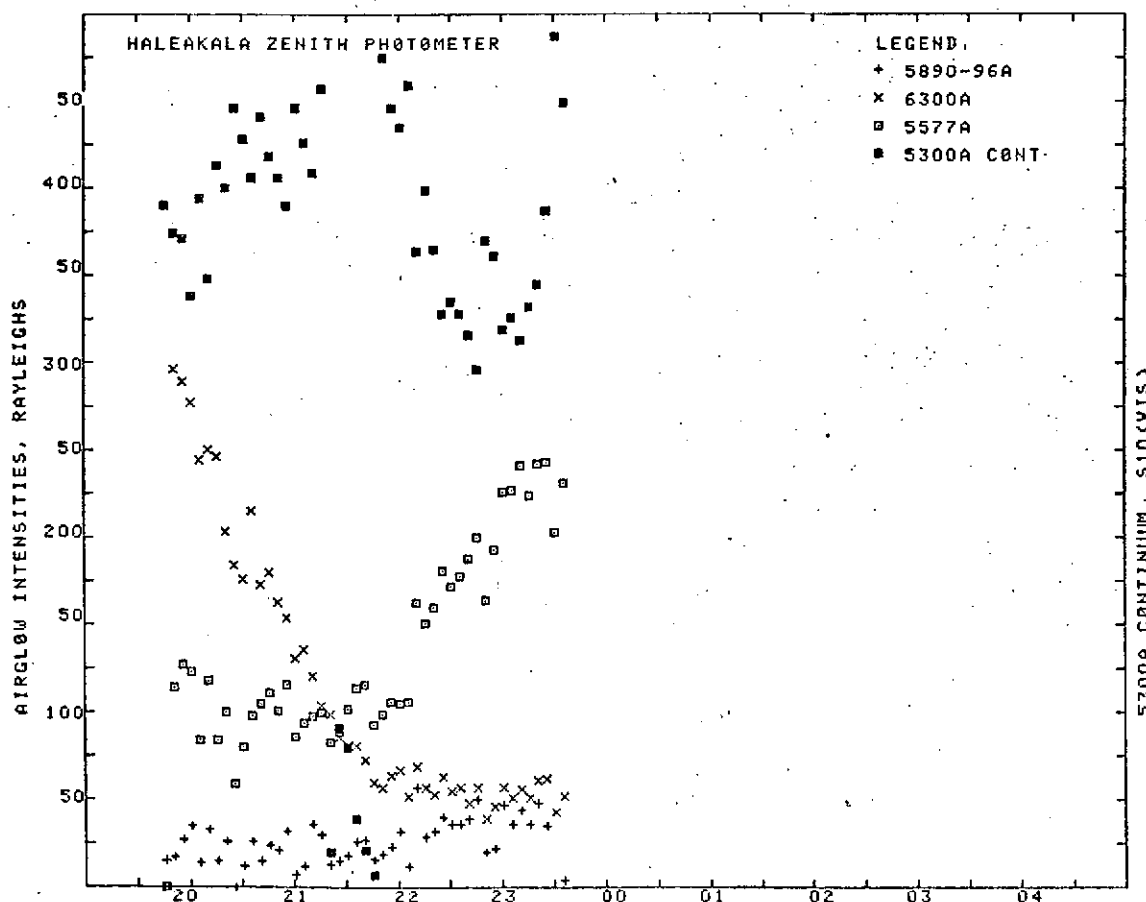




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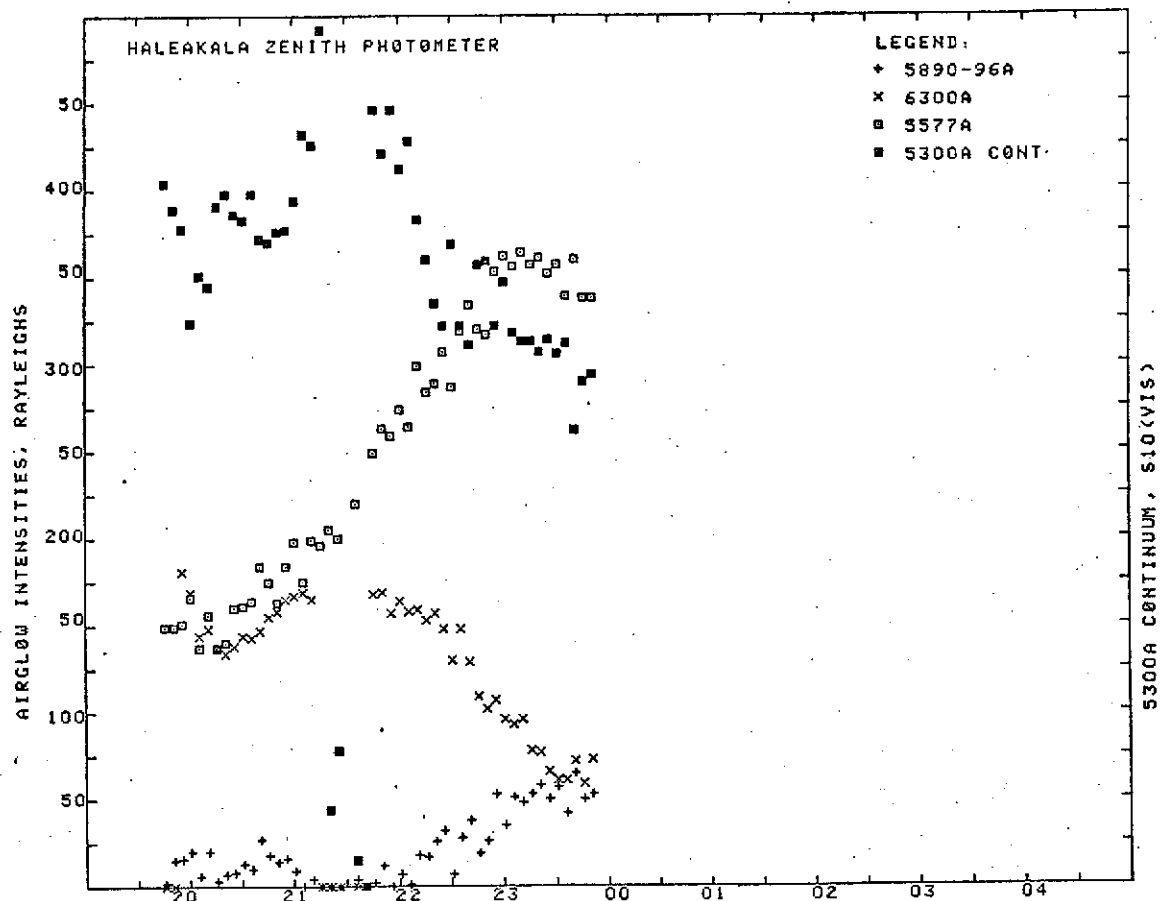


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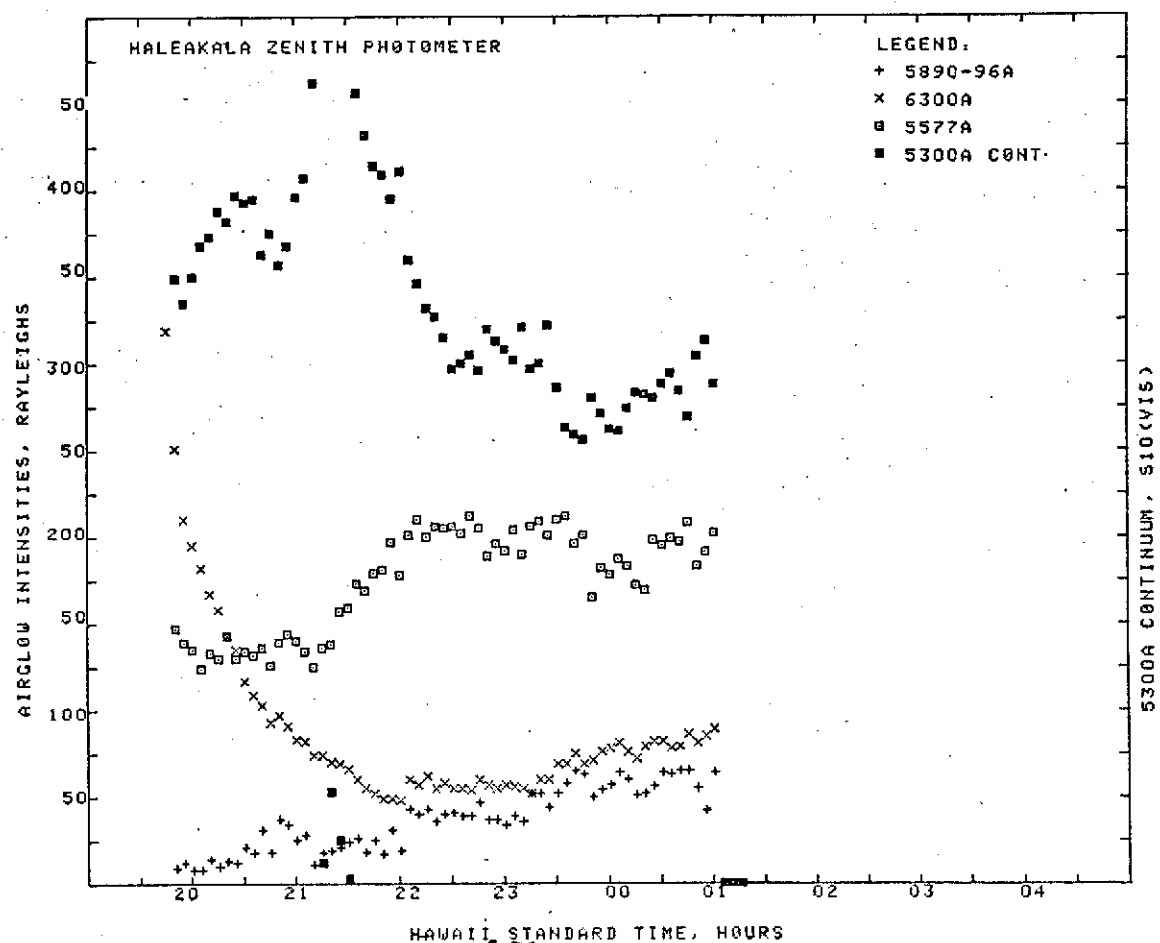


HAWAII STANDARD TIME, HOURS

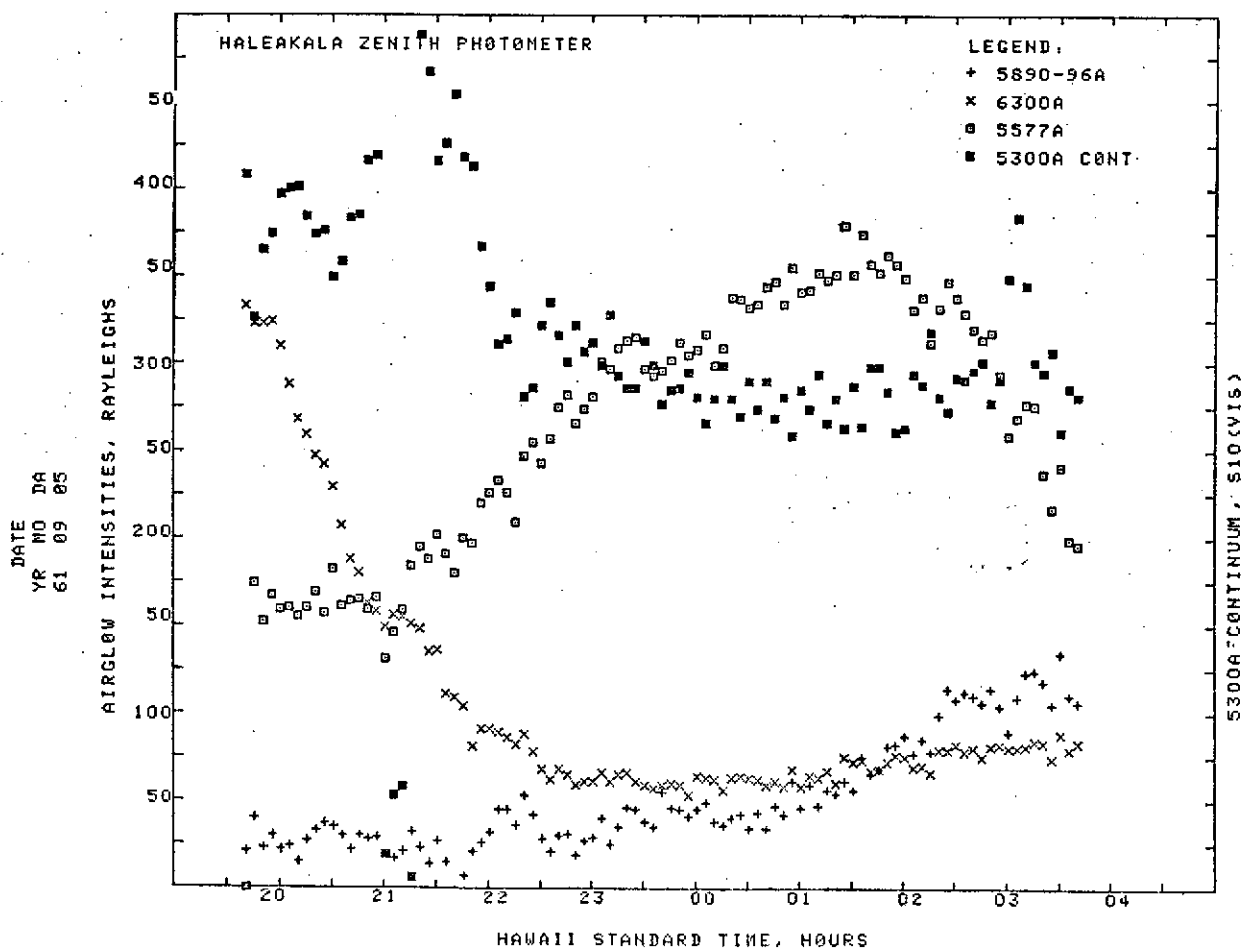
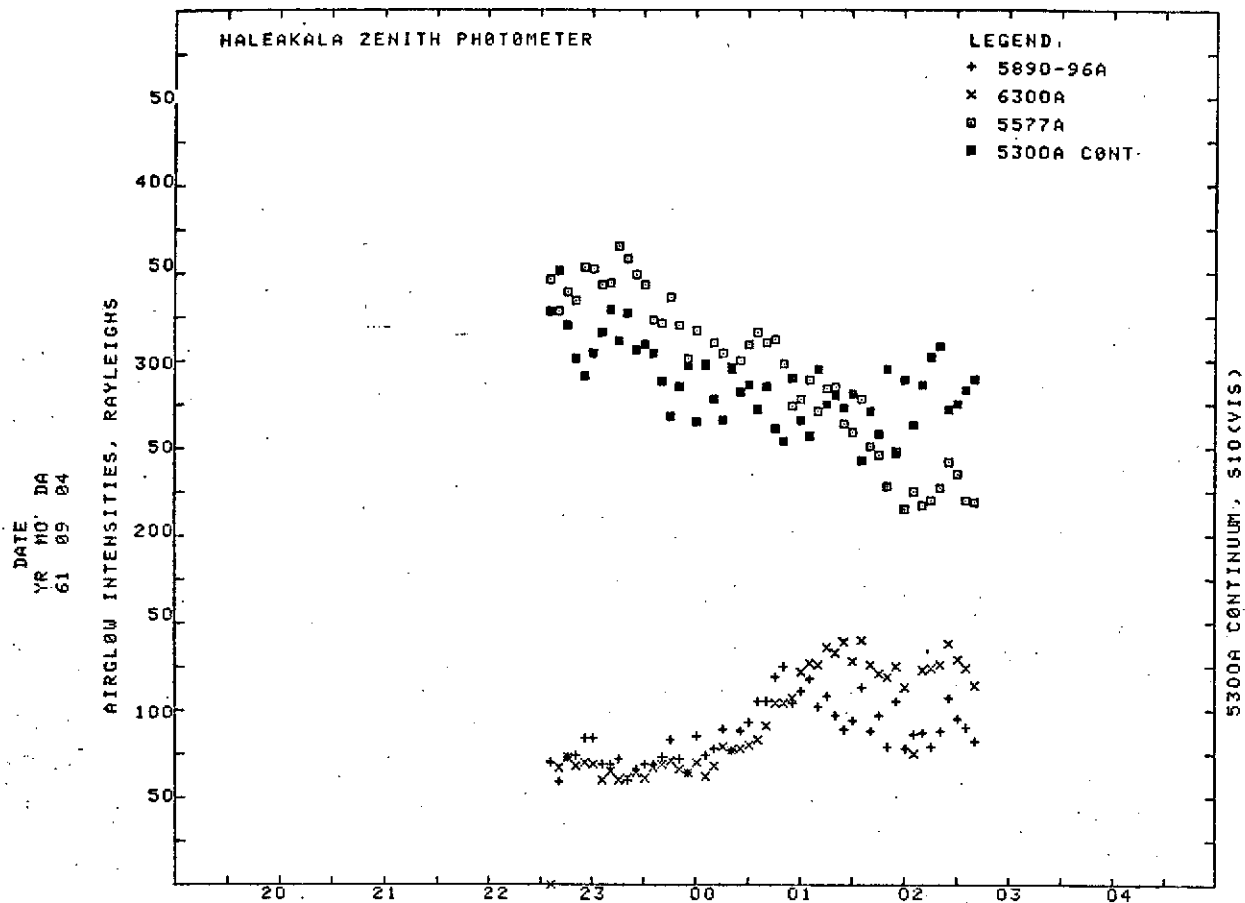
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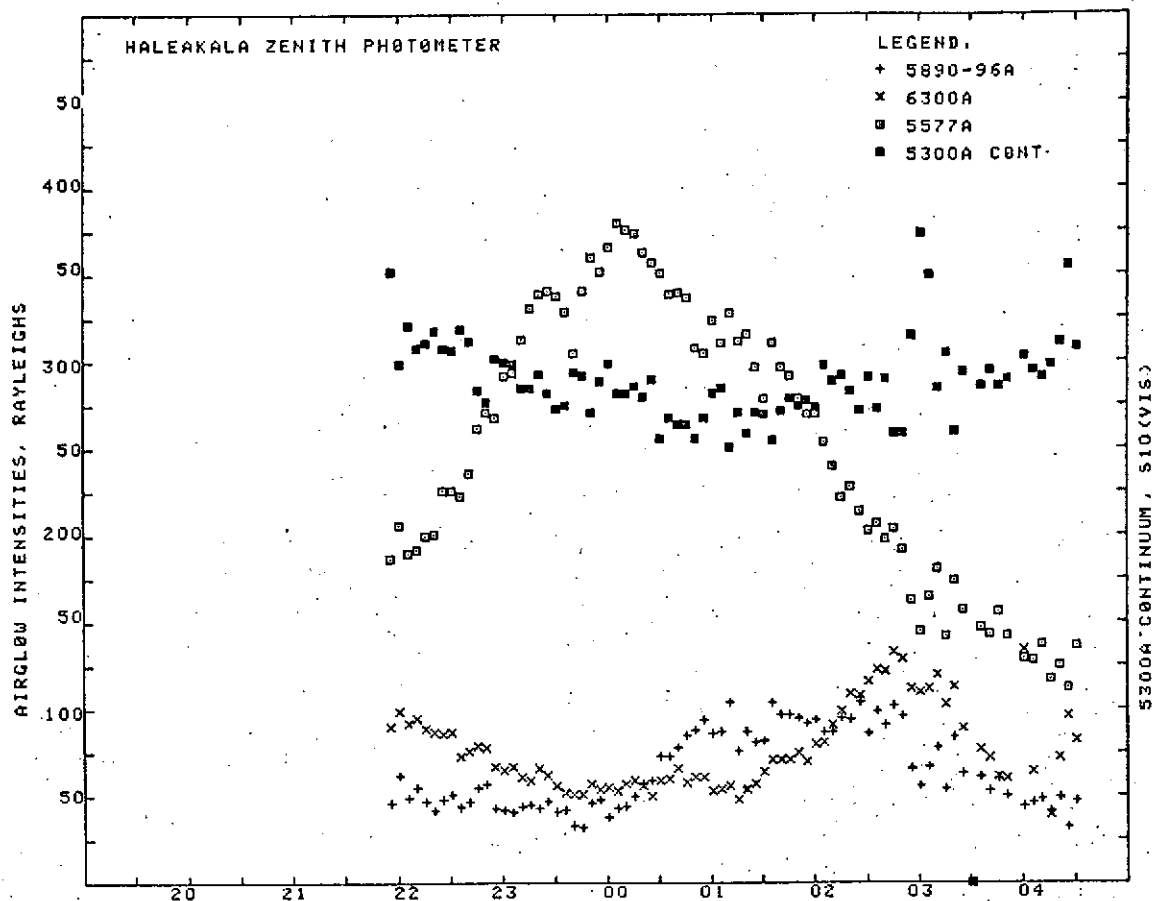
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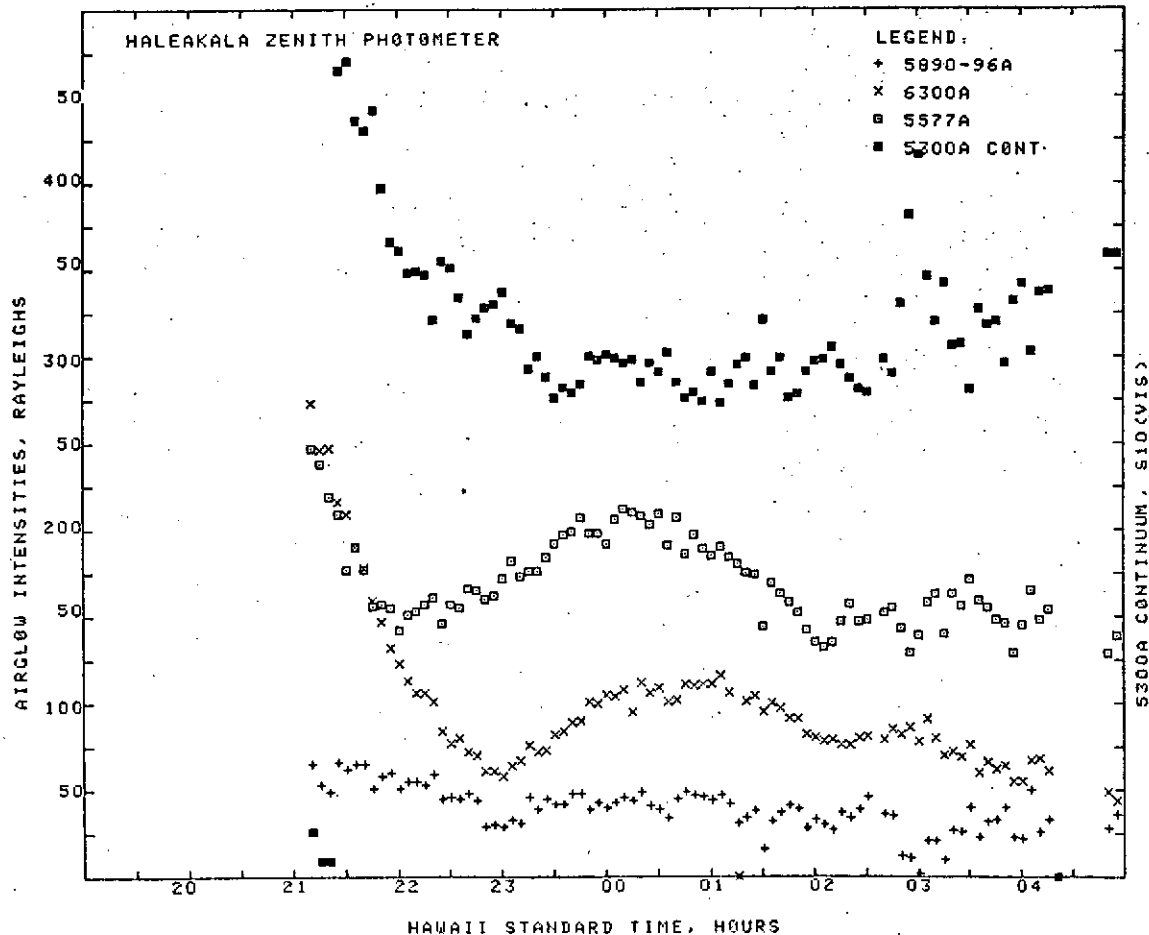




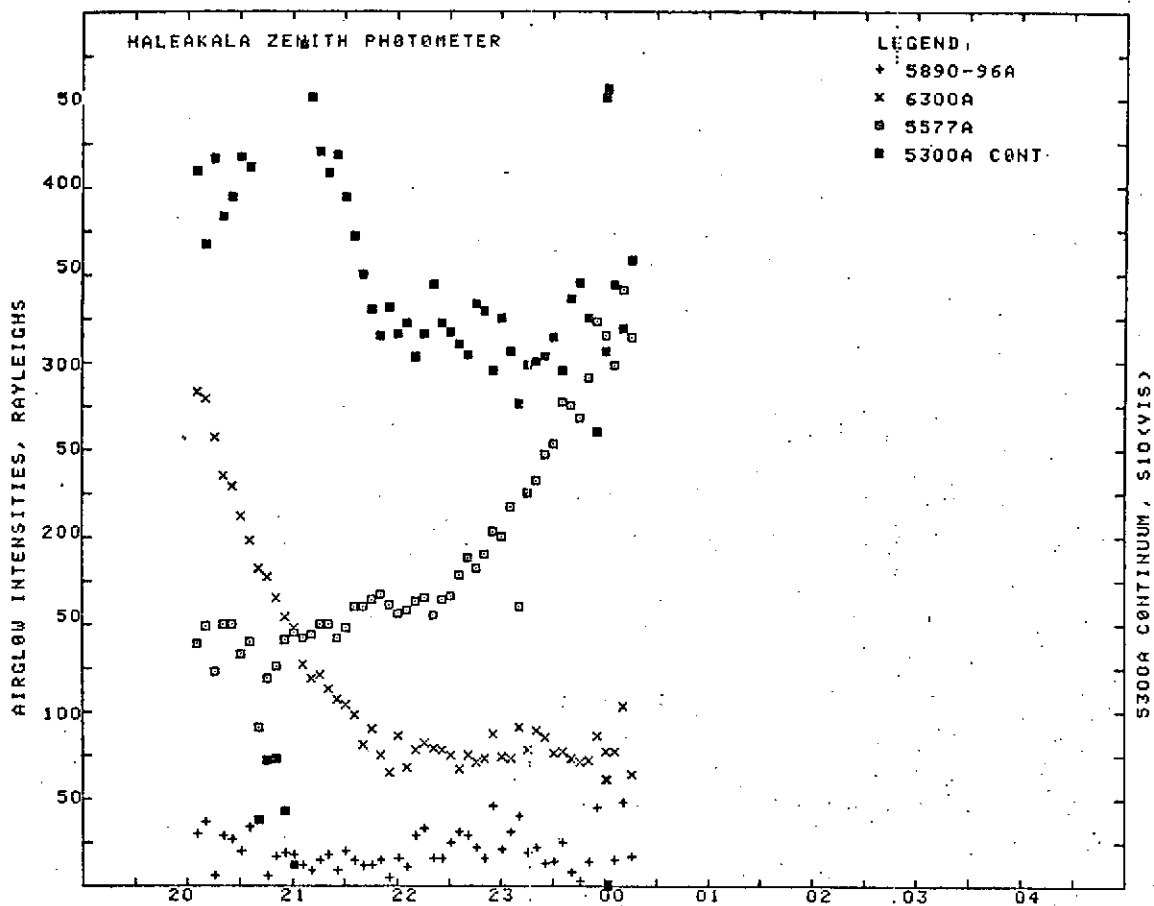
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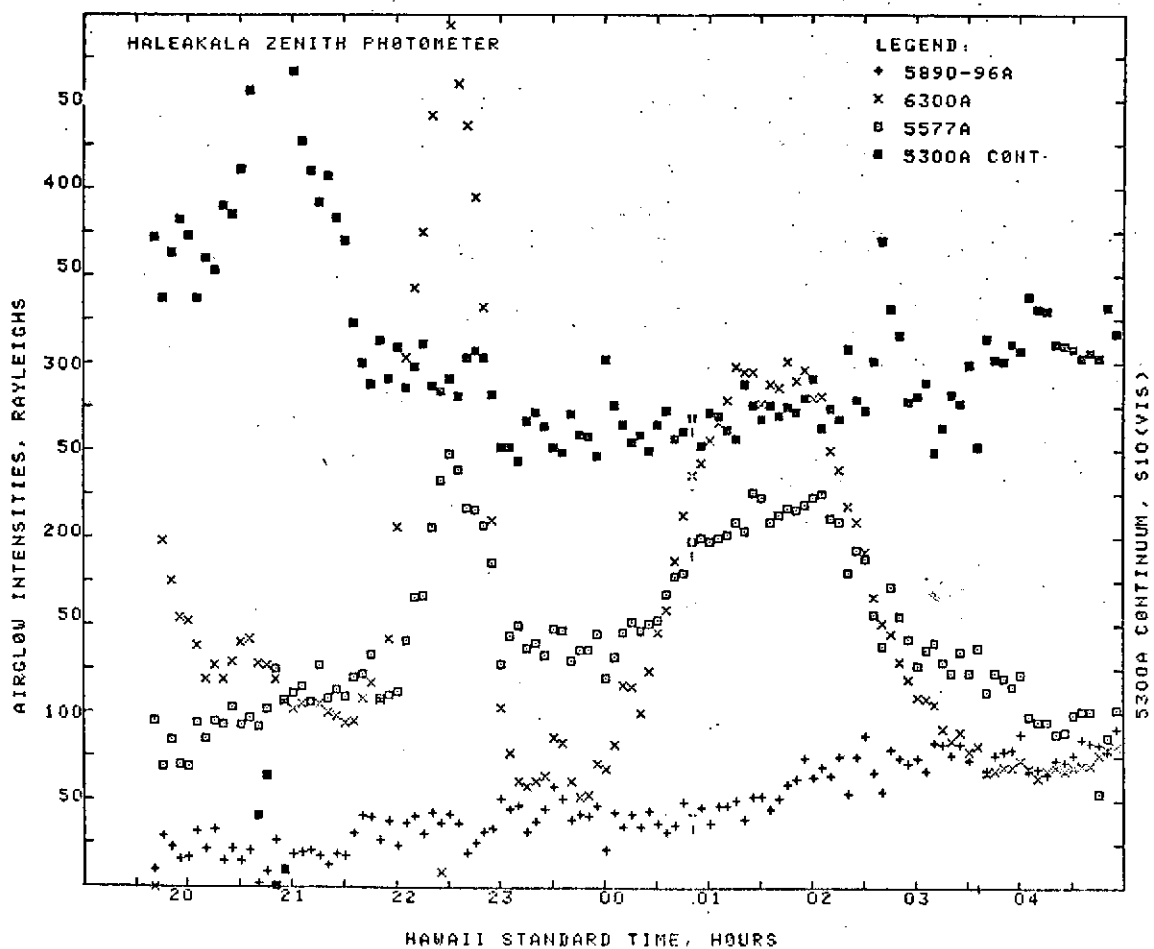
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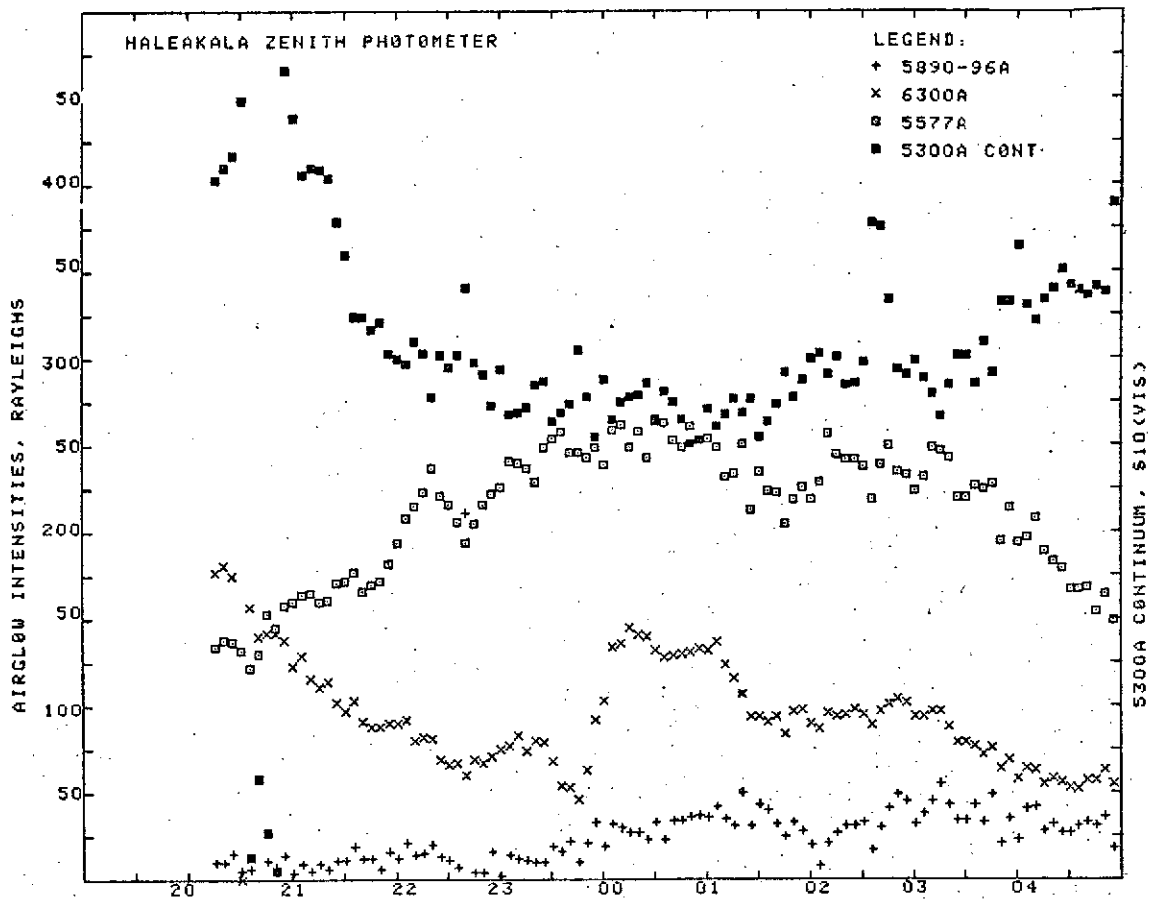
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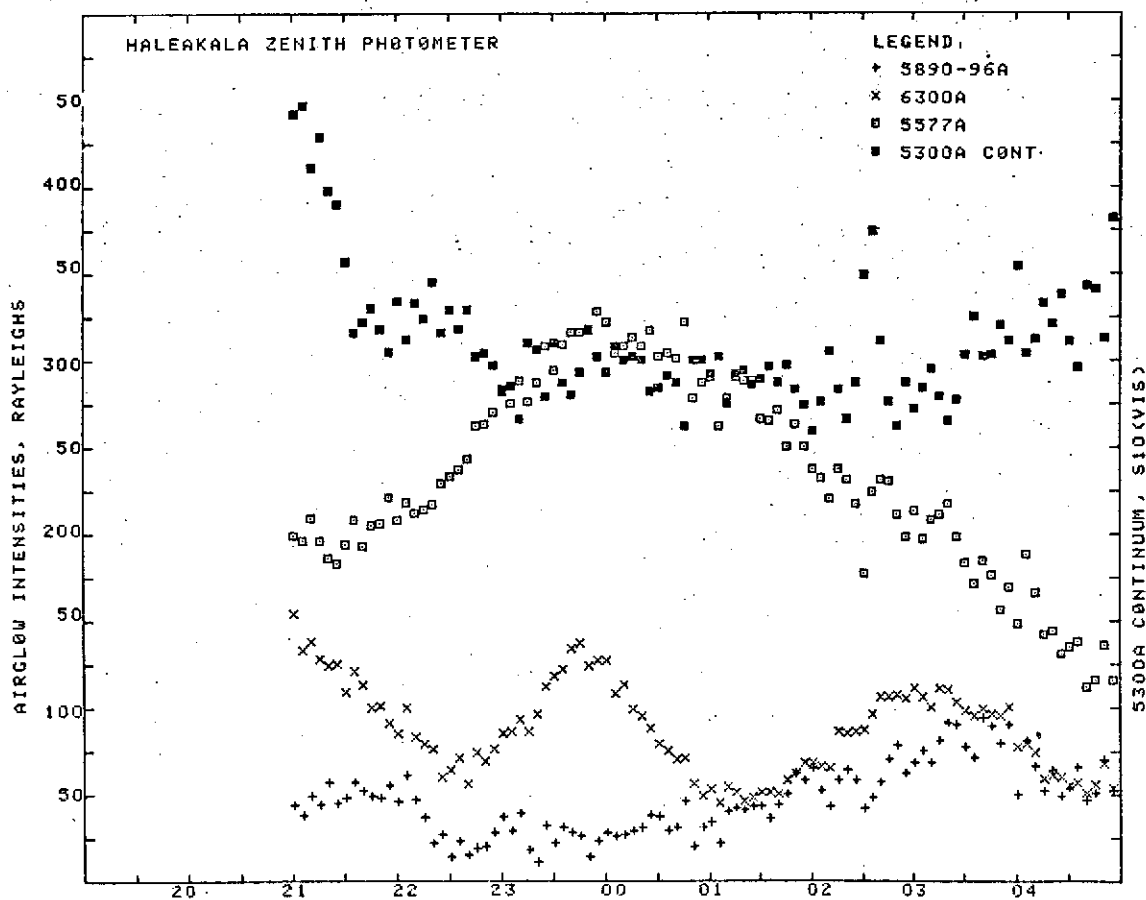
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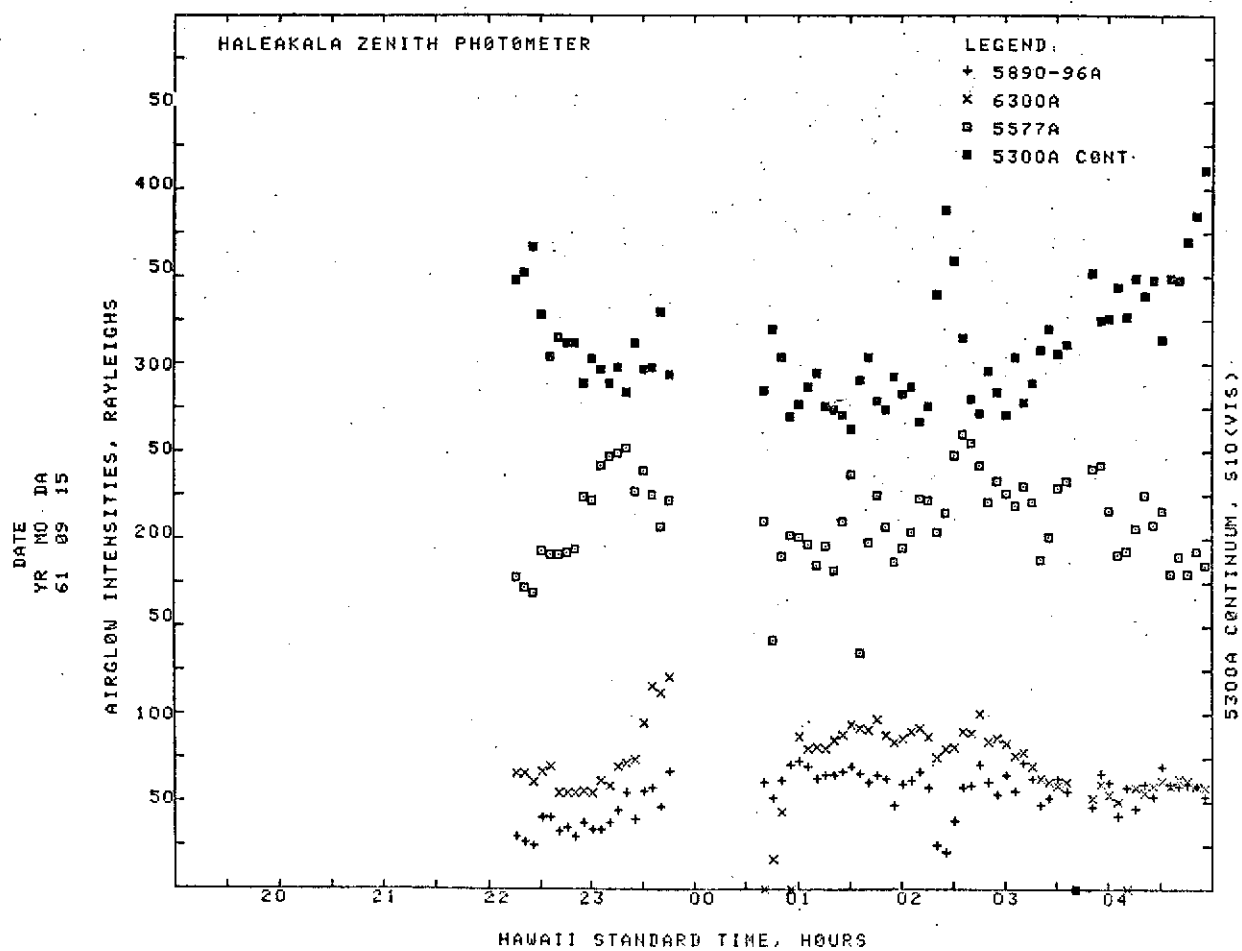
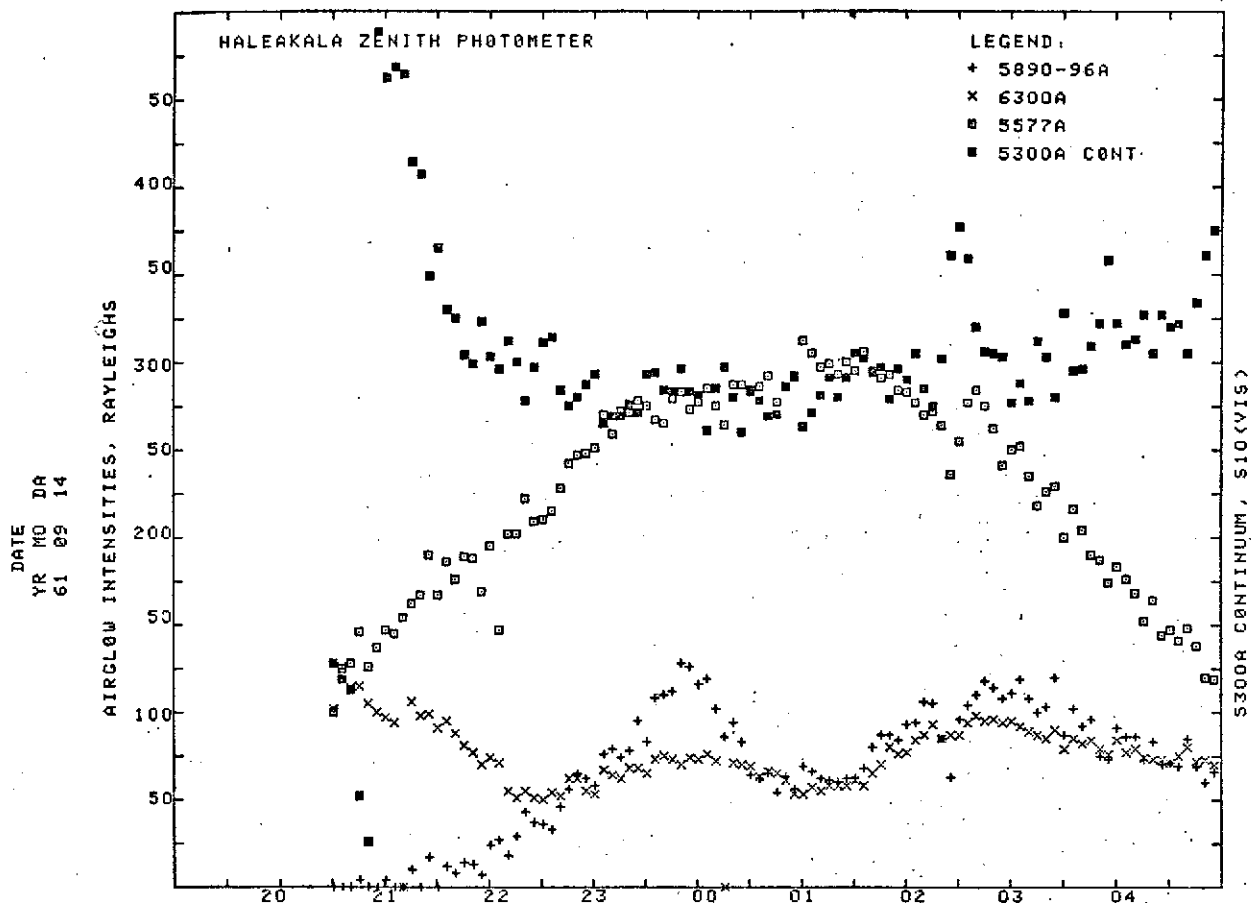
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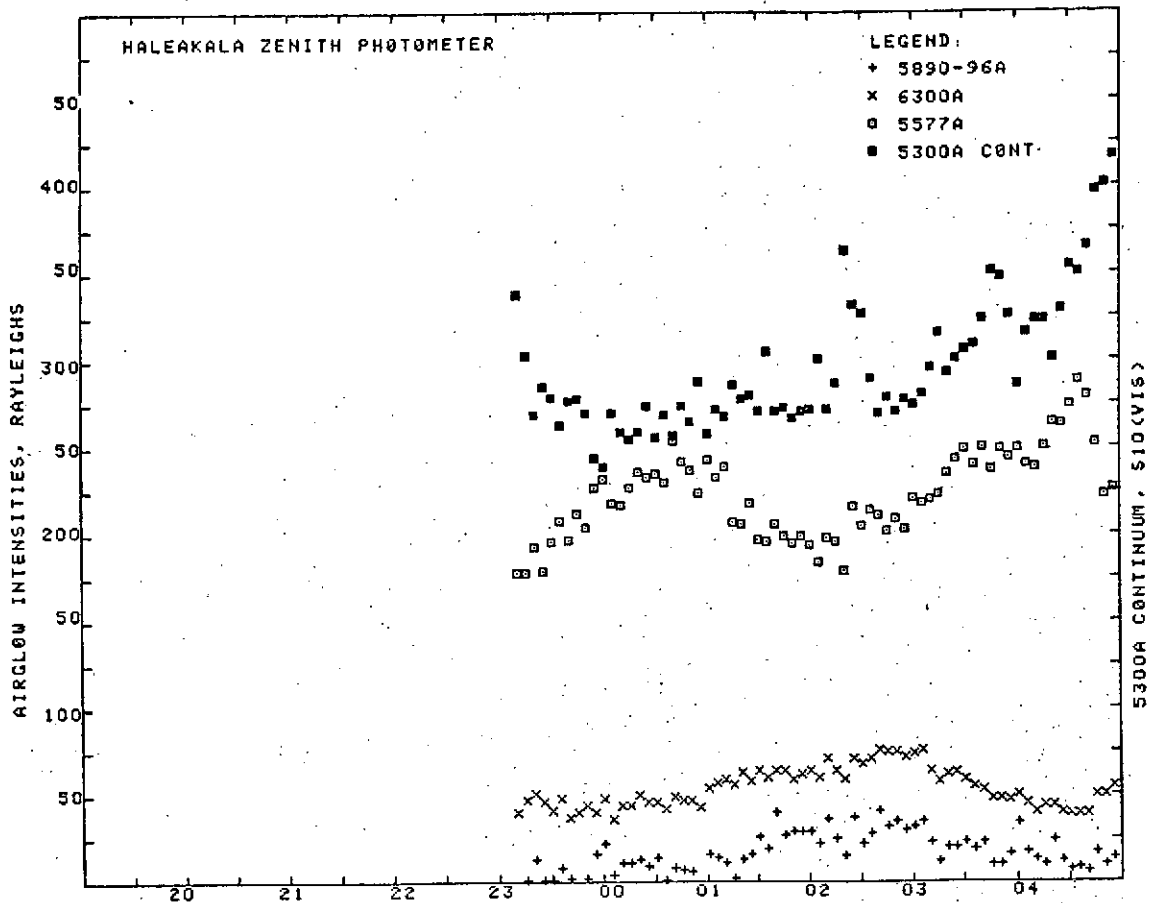
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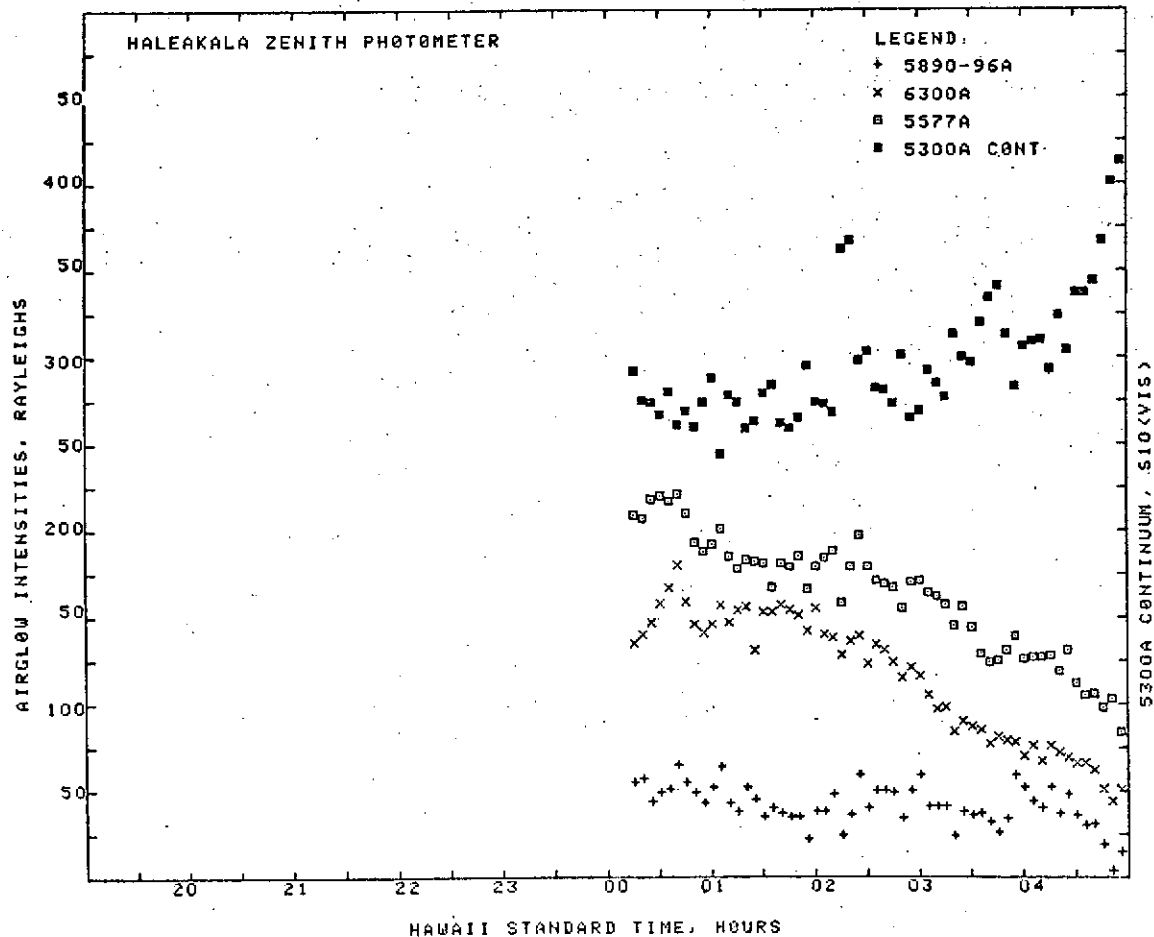
HAWAII STANDARD TIME, HOURS

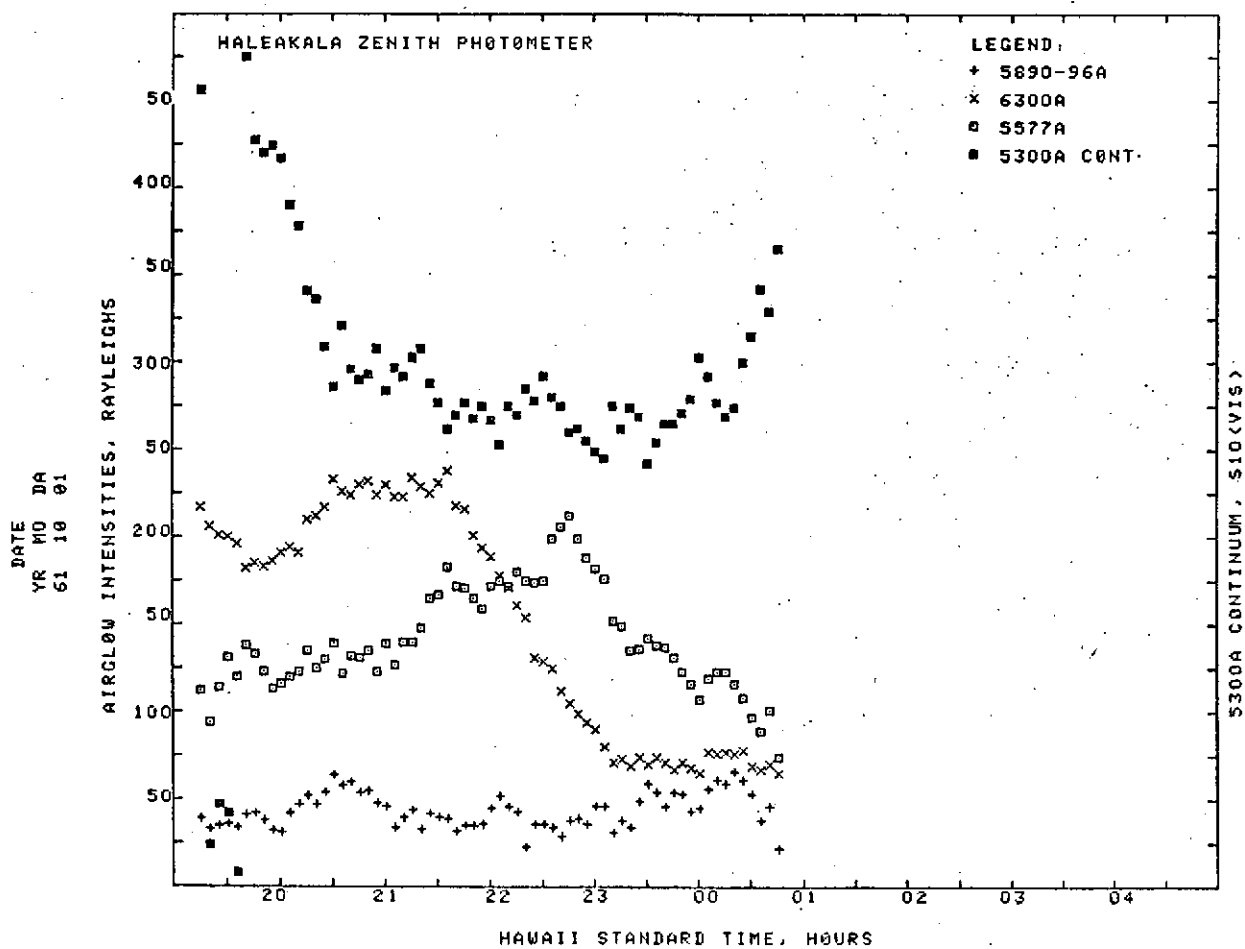
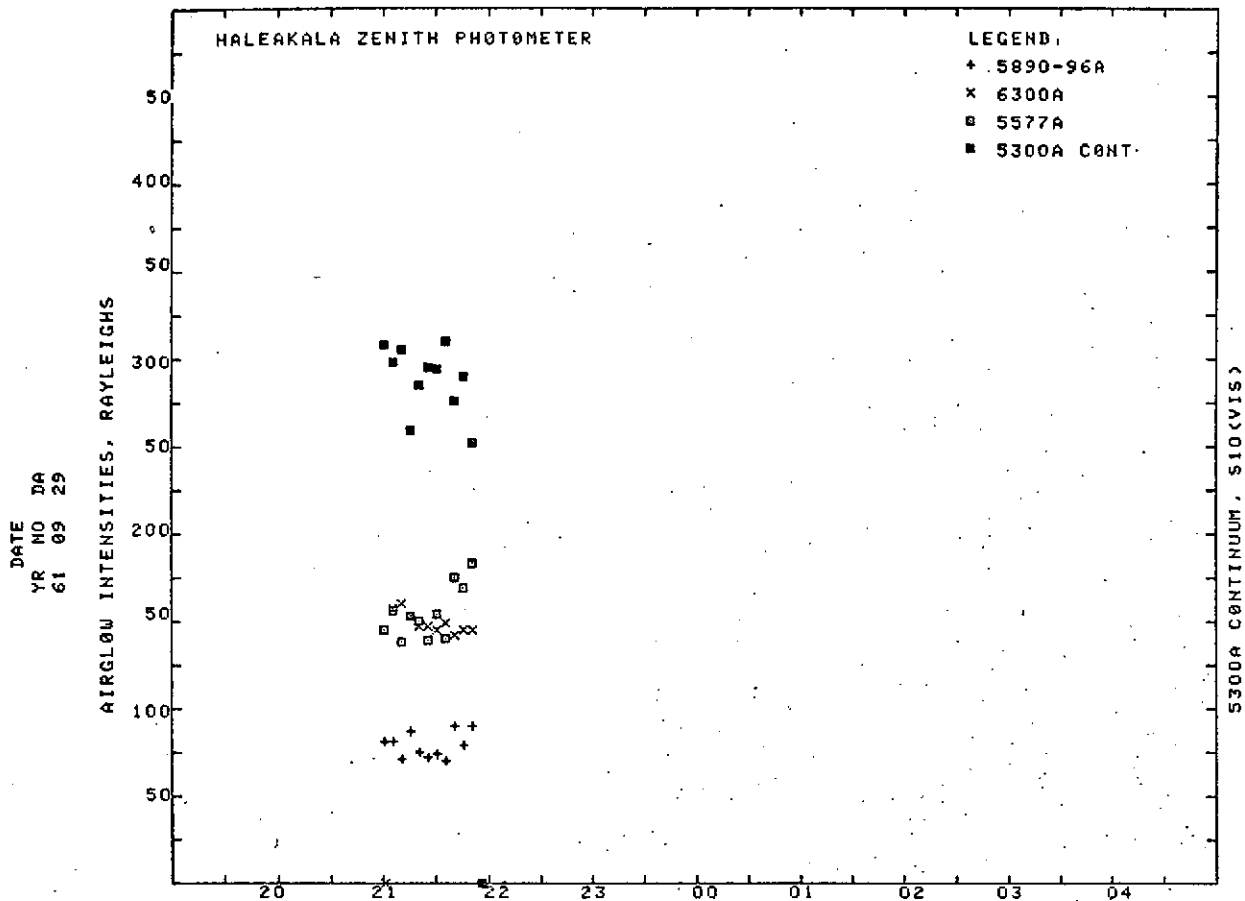


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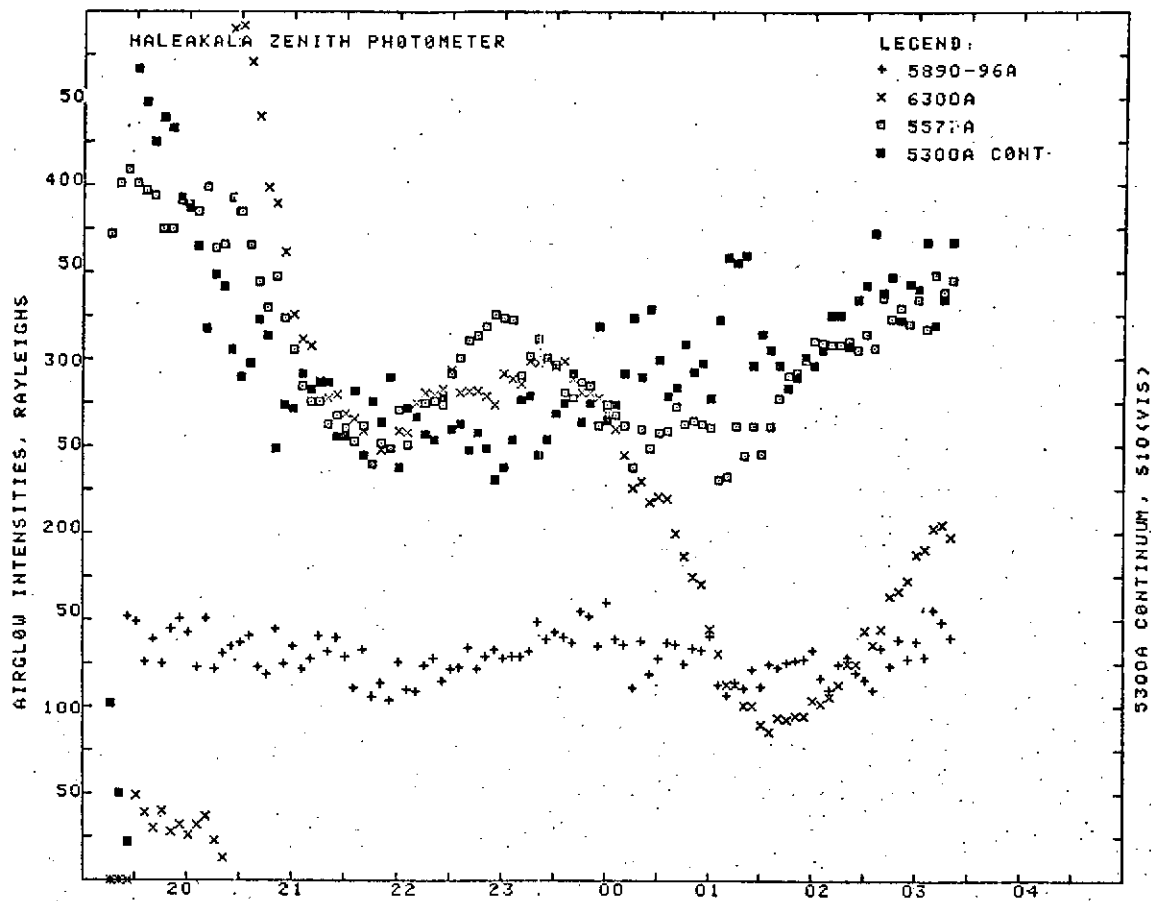


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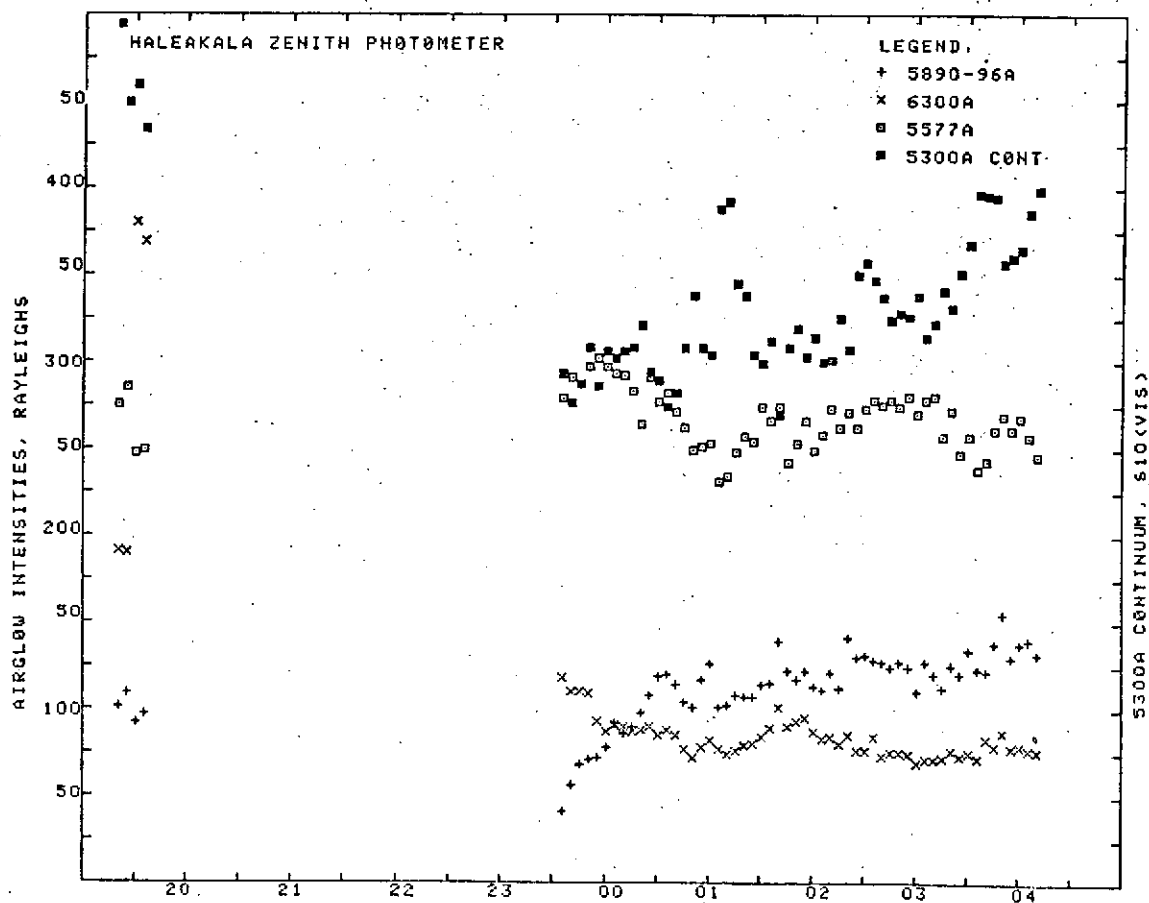




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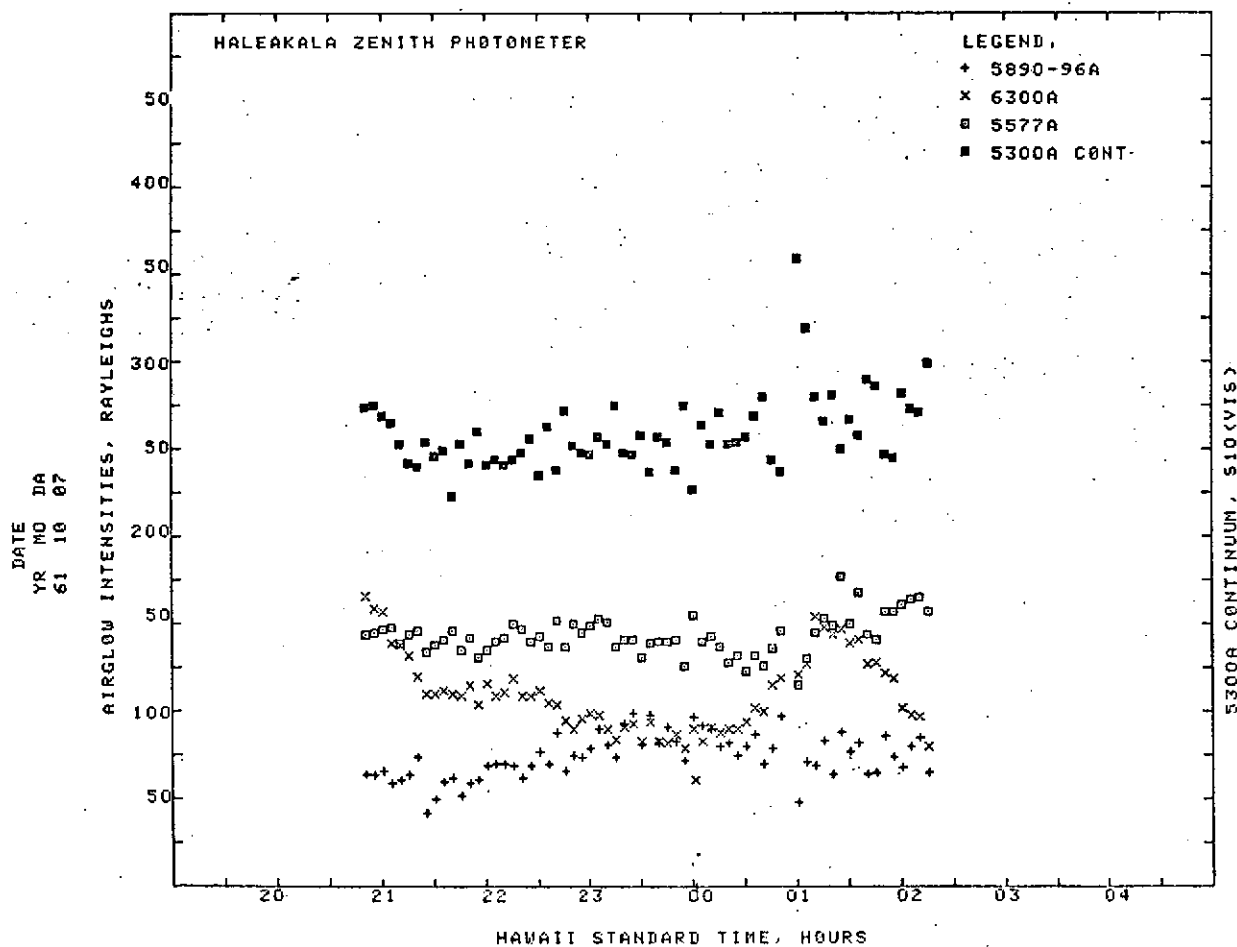
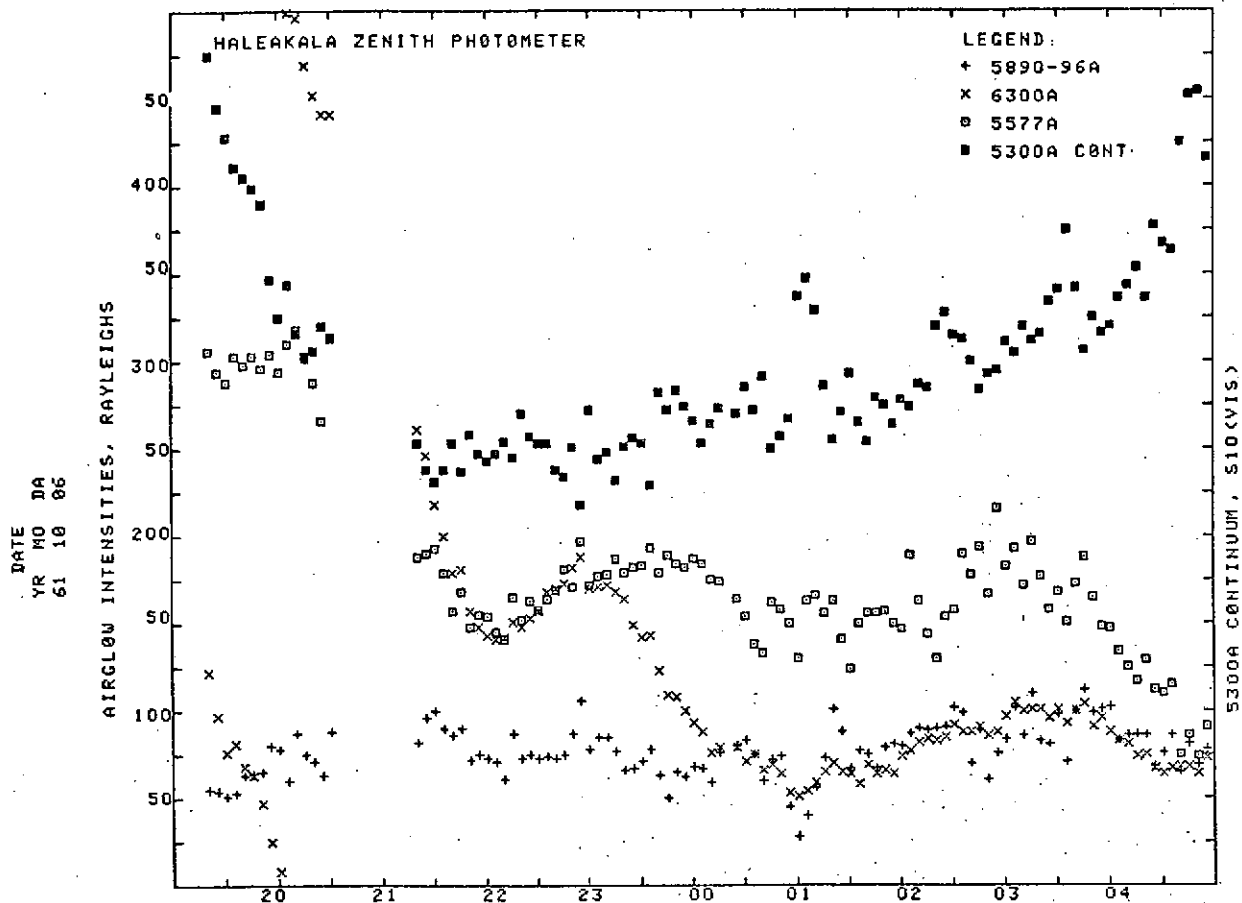


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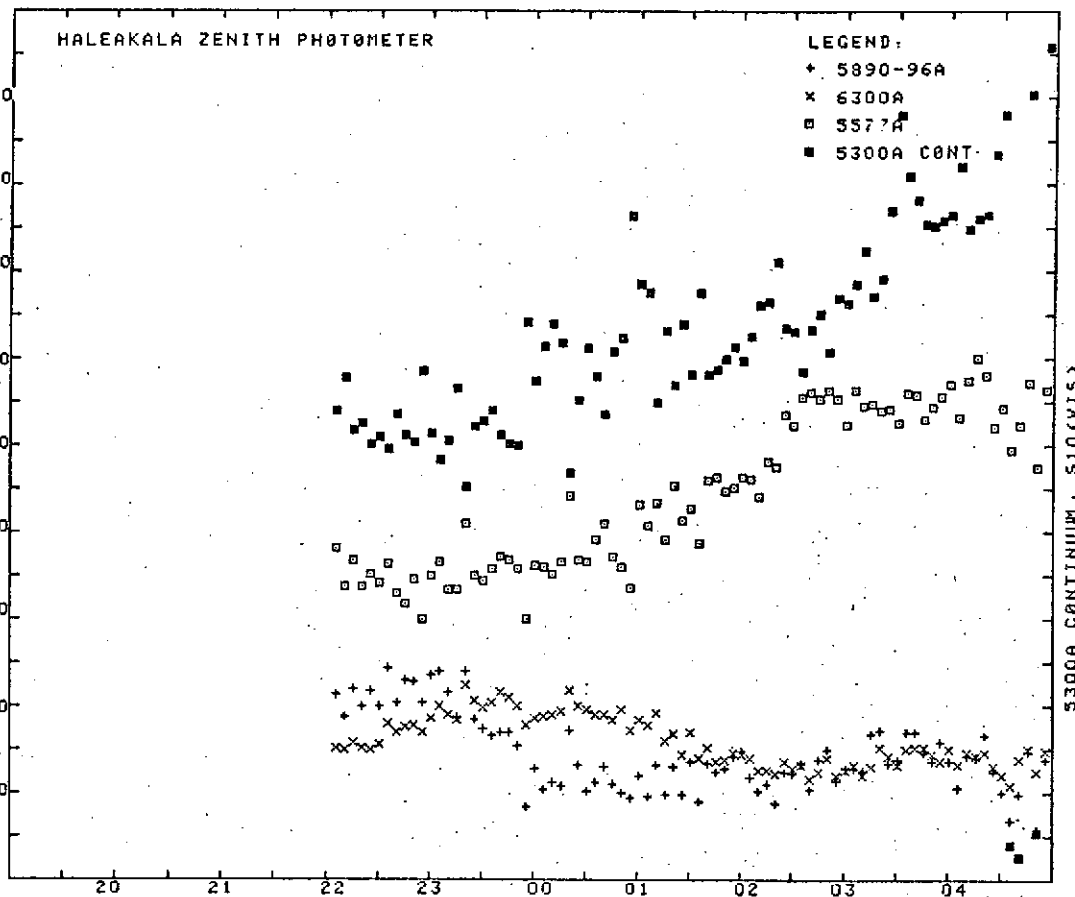
HAWAII STANDARD TIME, HOURS





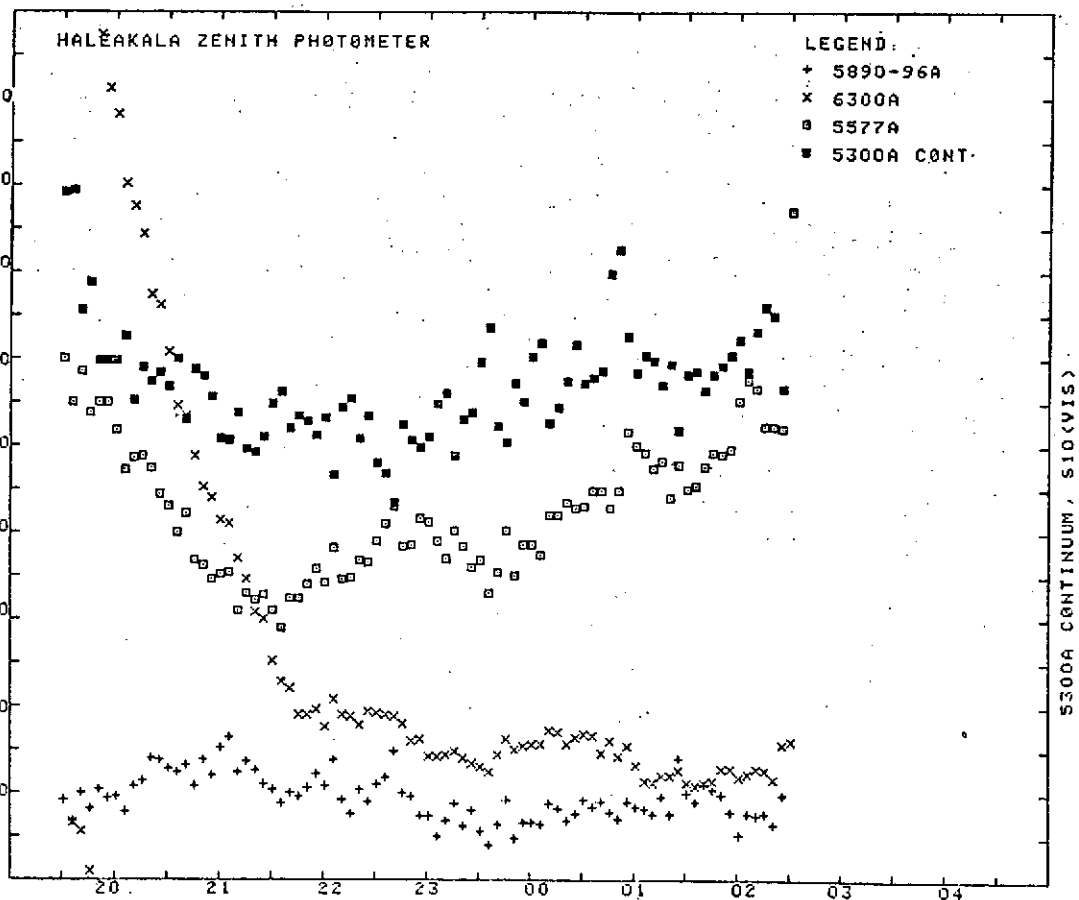
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AIRCLOW INTENSITIES, RAYLEIGHS

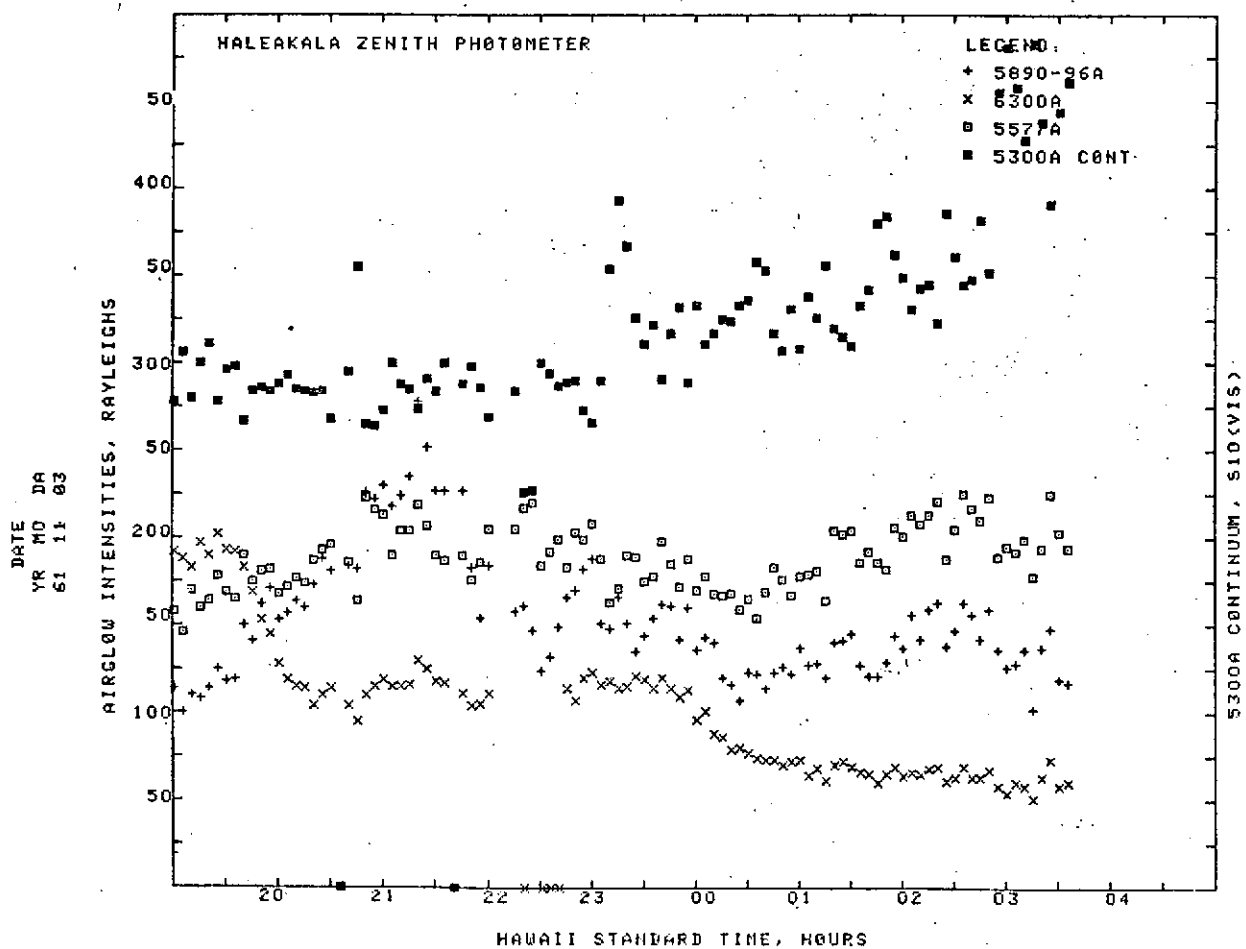
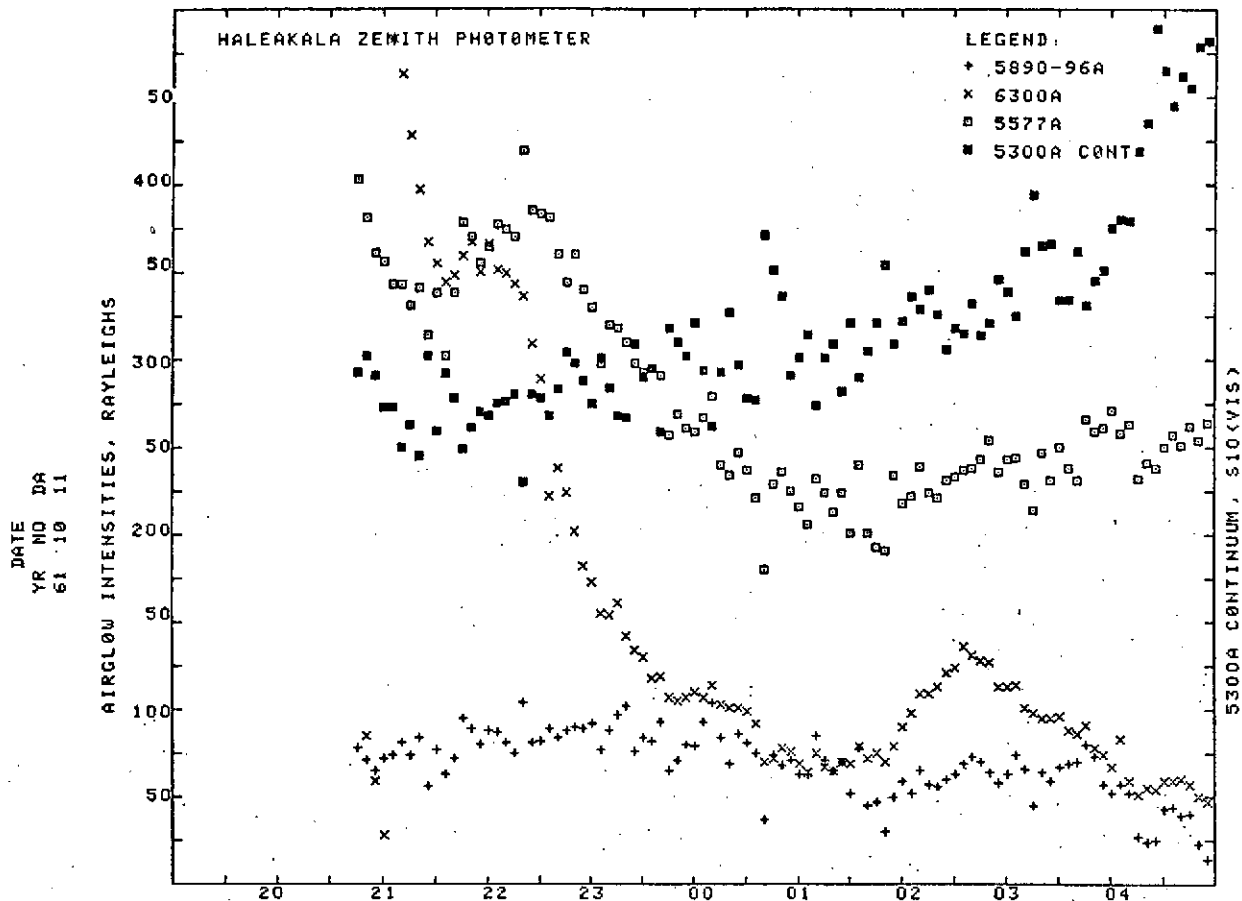


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AIRCLOW INTENSITIES, RAYLEIGHS

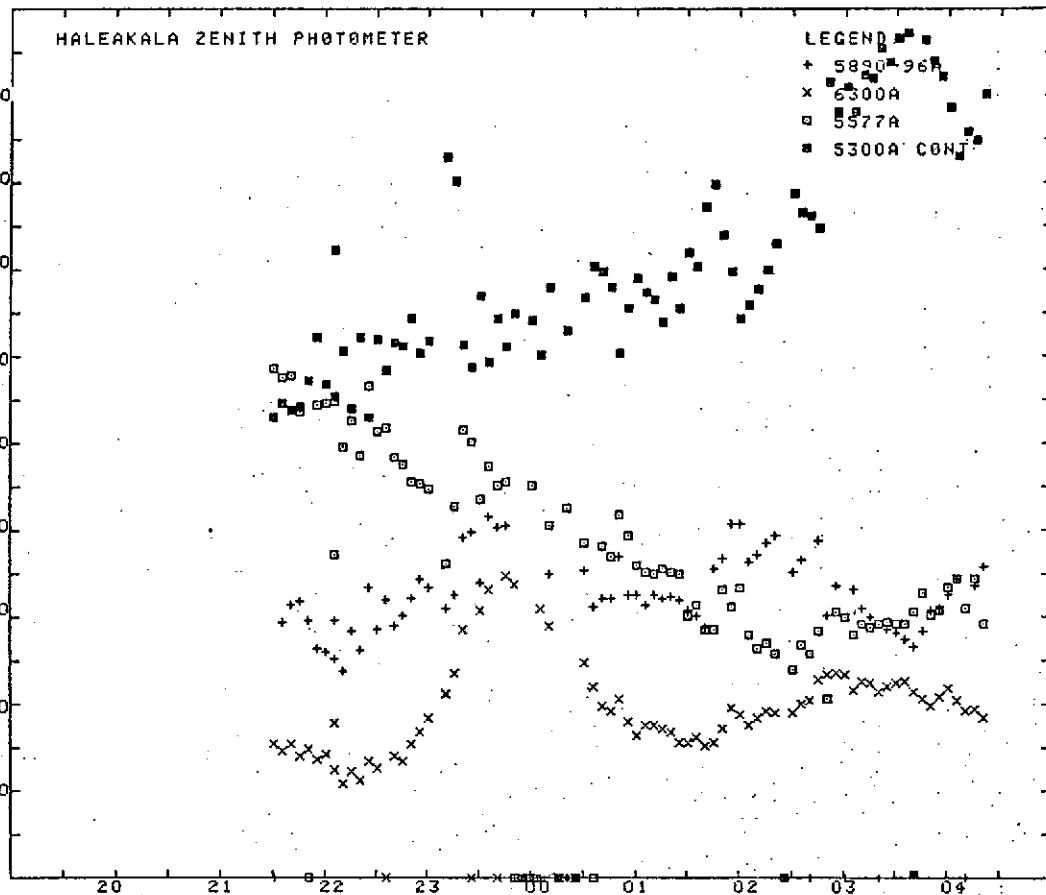


HAWAII STANDARD TIME, HOURS



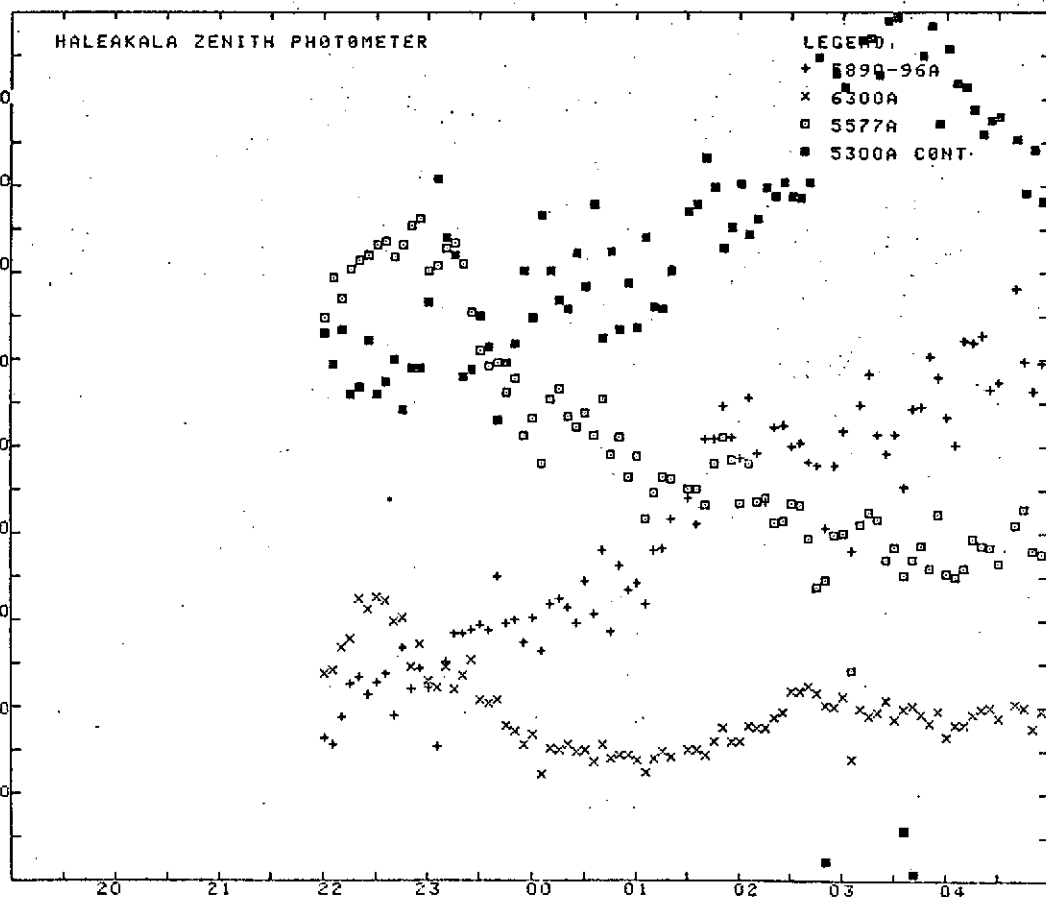
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AIRGLOW INTENSITIES, RAYLEIGHS



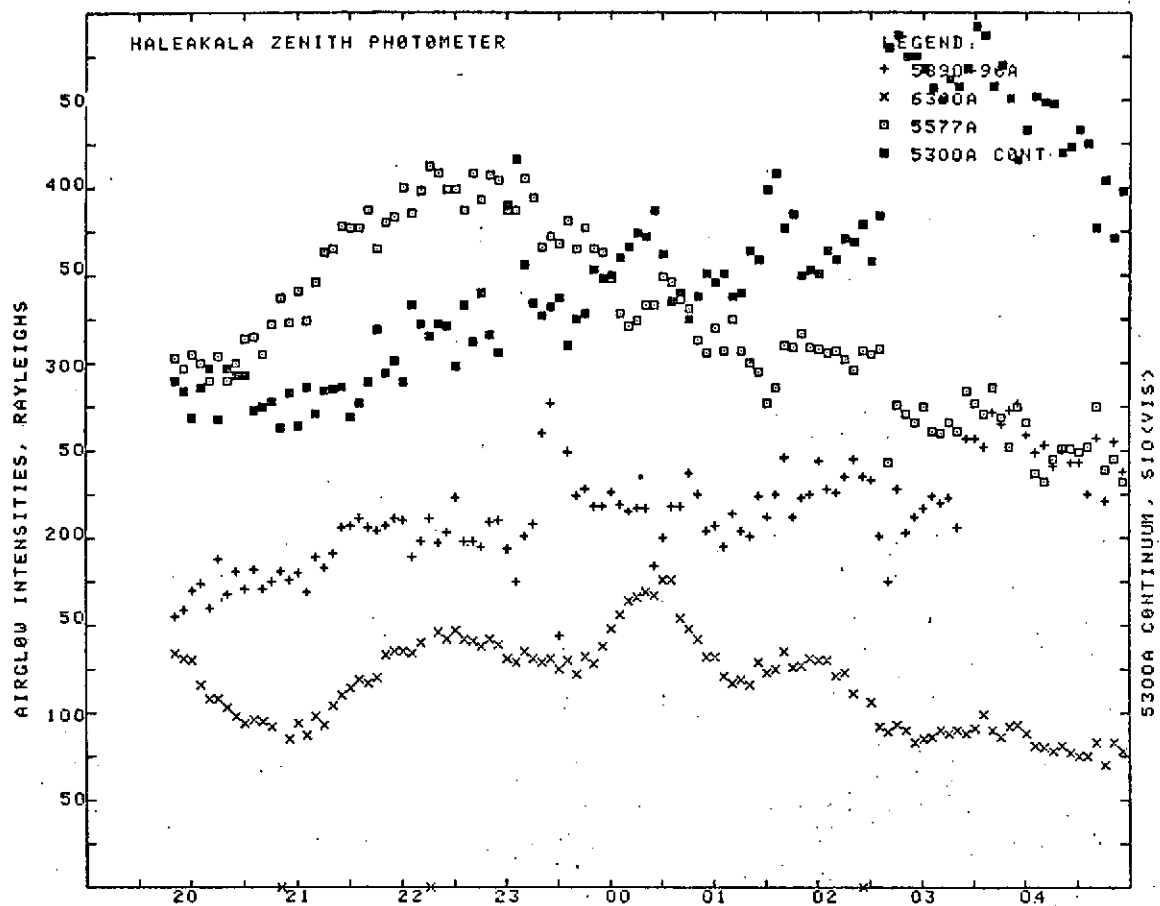
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AIRGLOW INTENSITIES, RAYLEIGHS

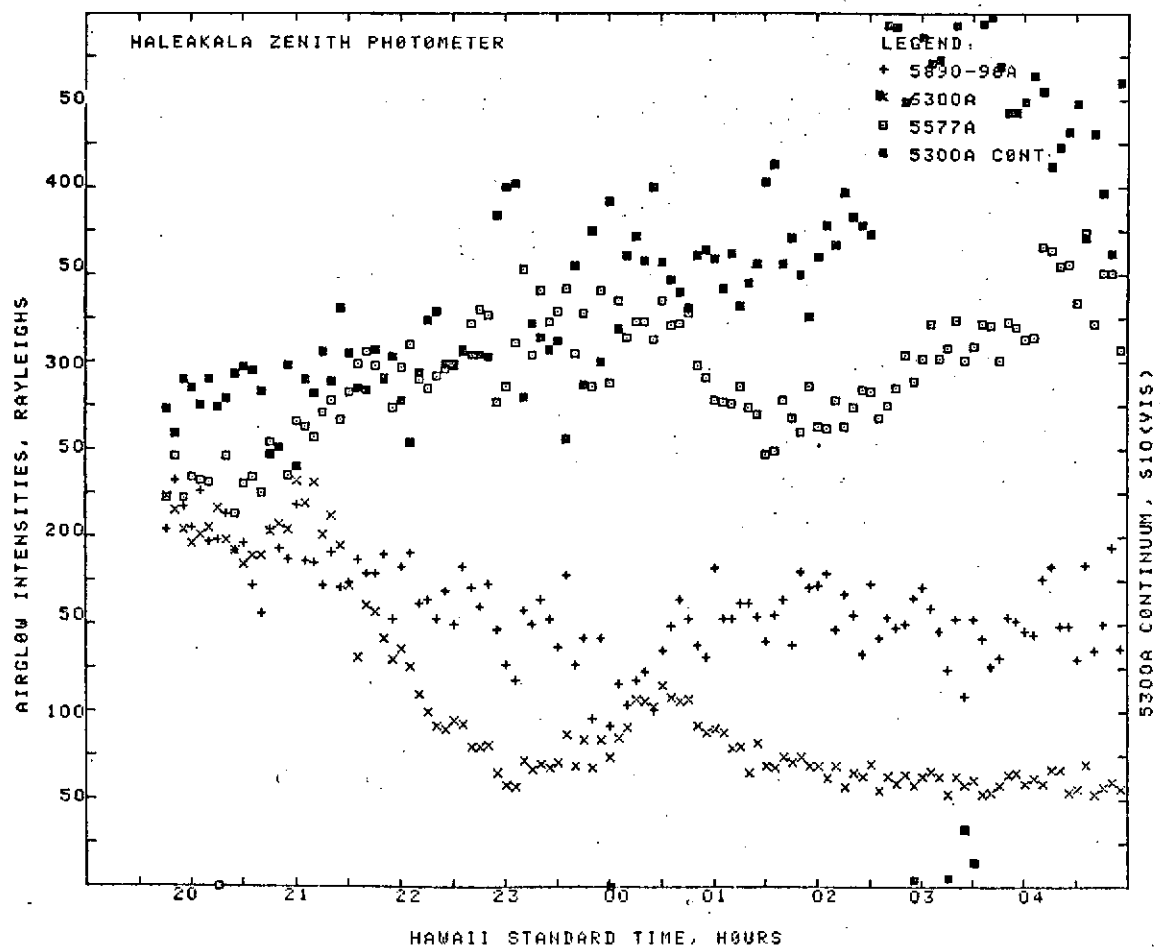


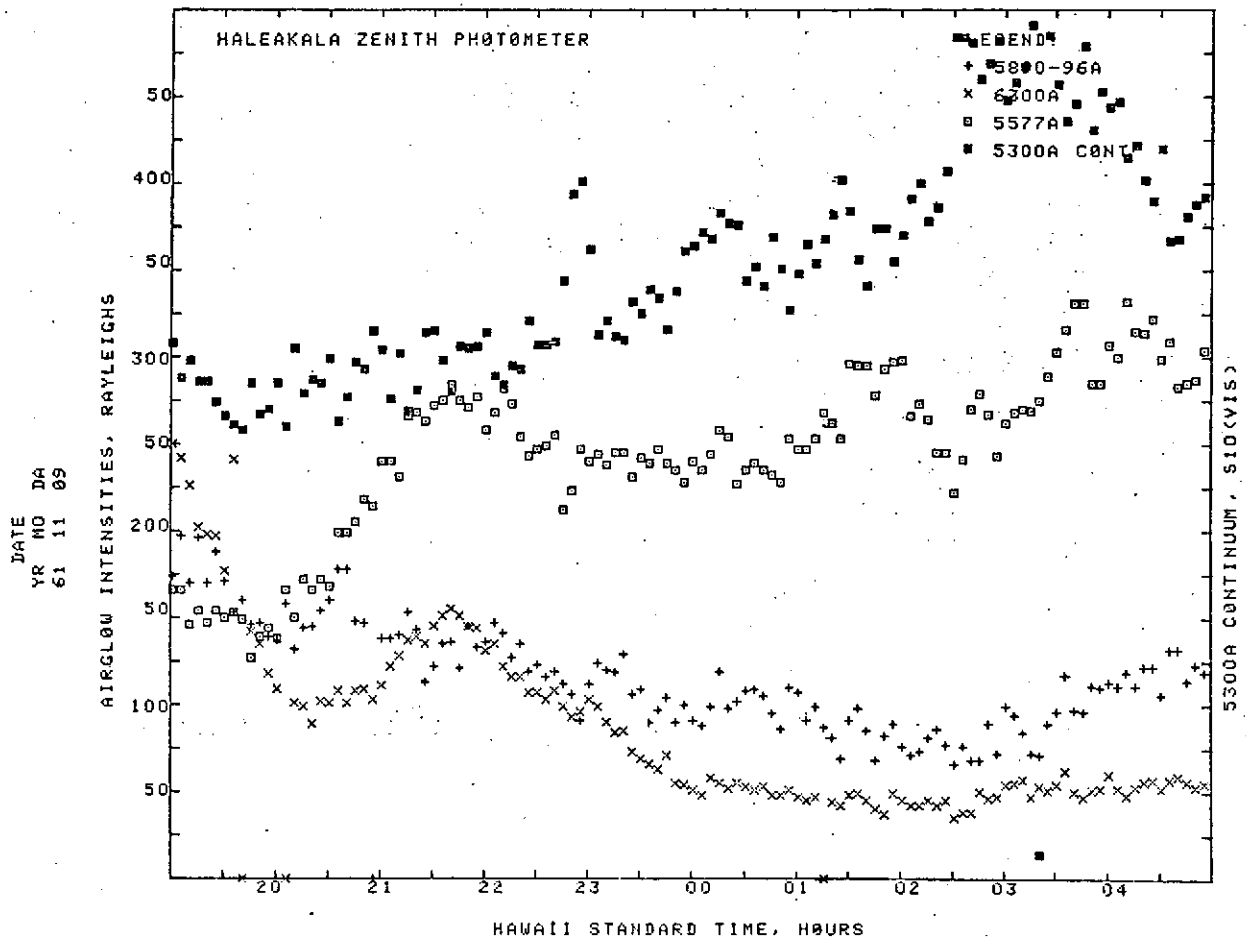
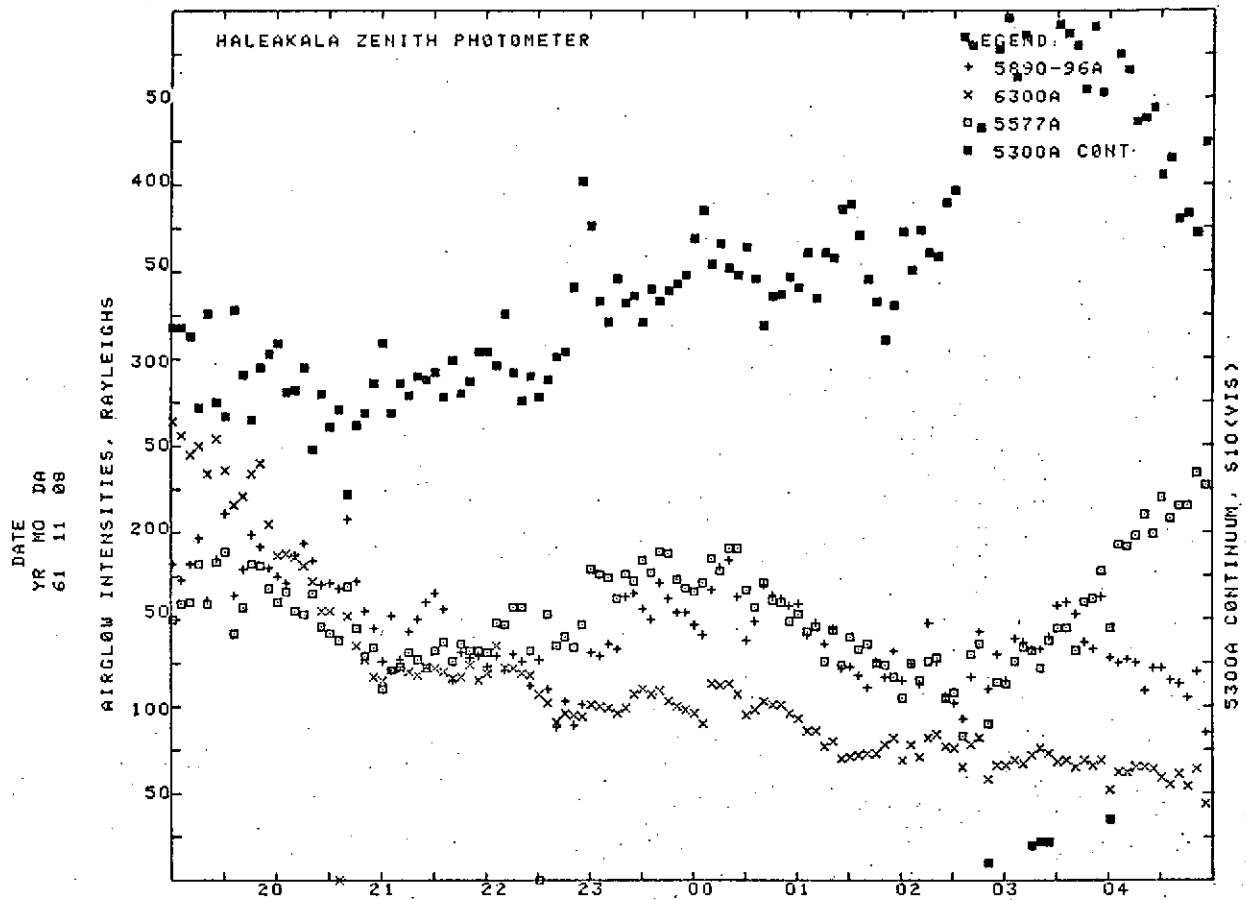
HAWAII STANDARD TIME, HOURS

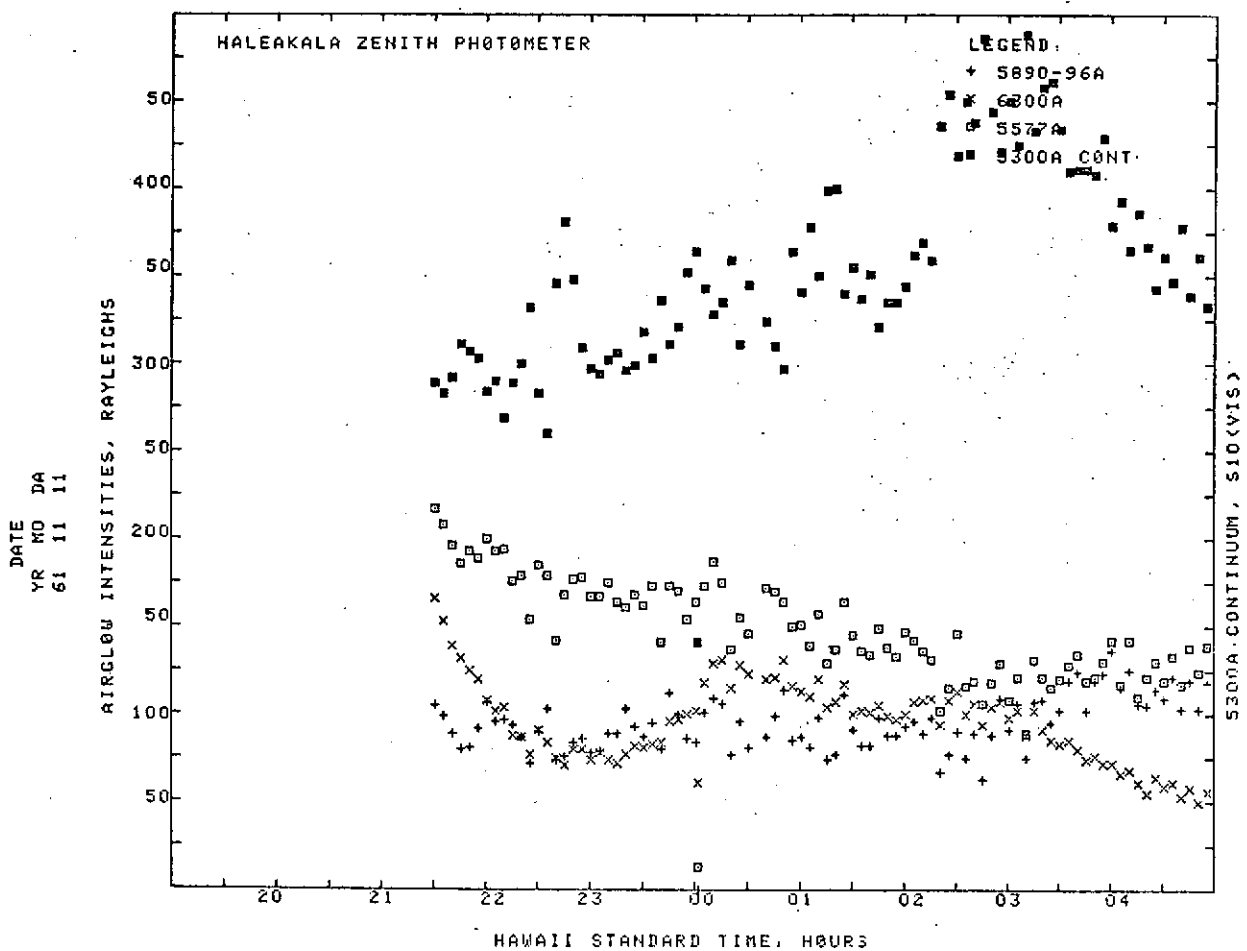
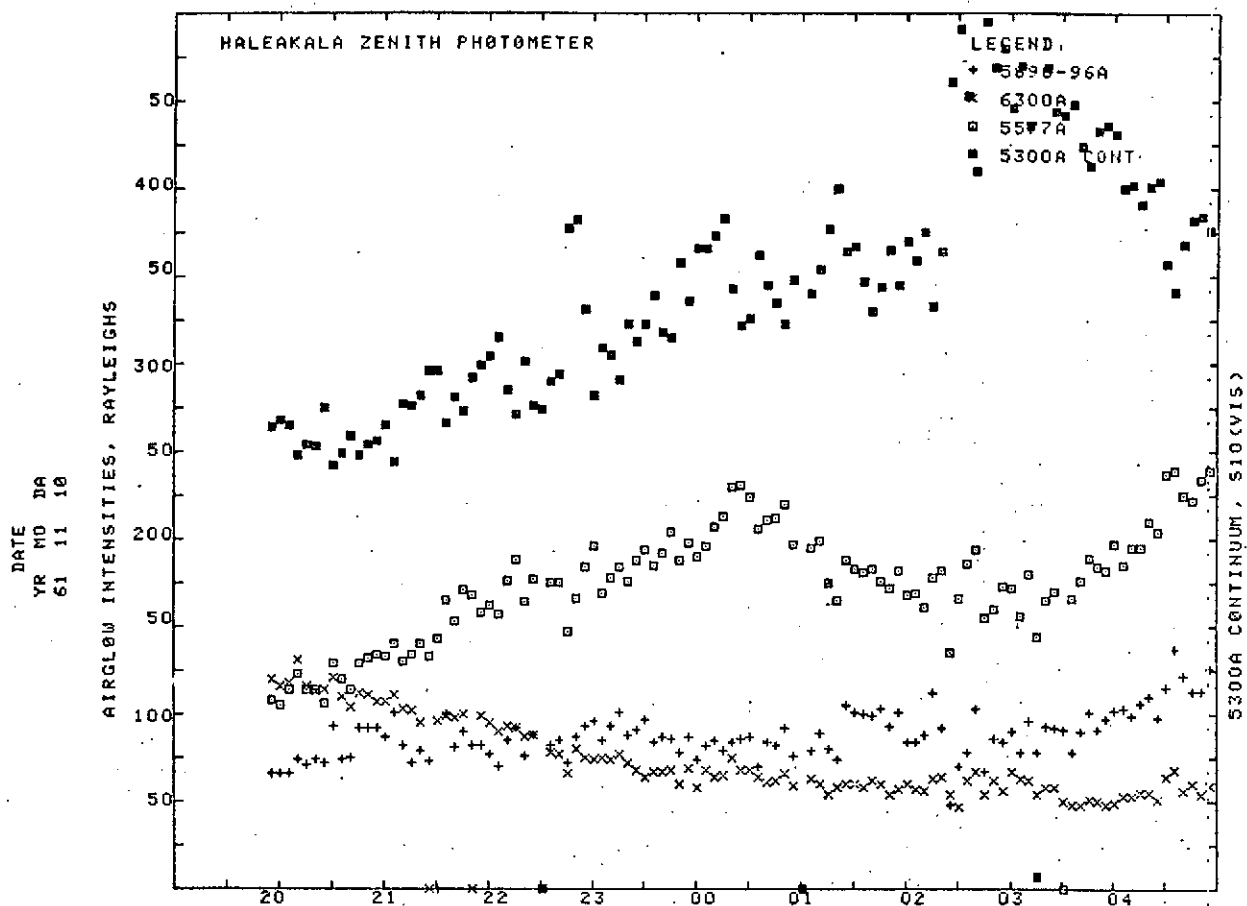
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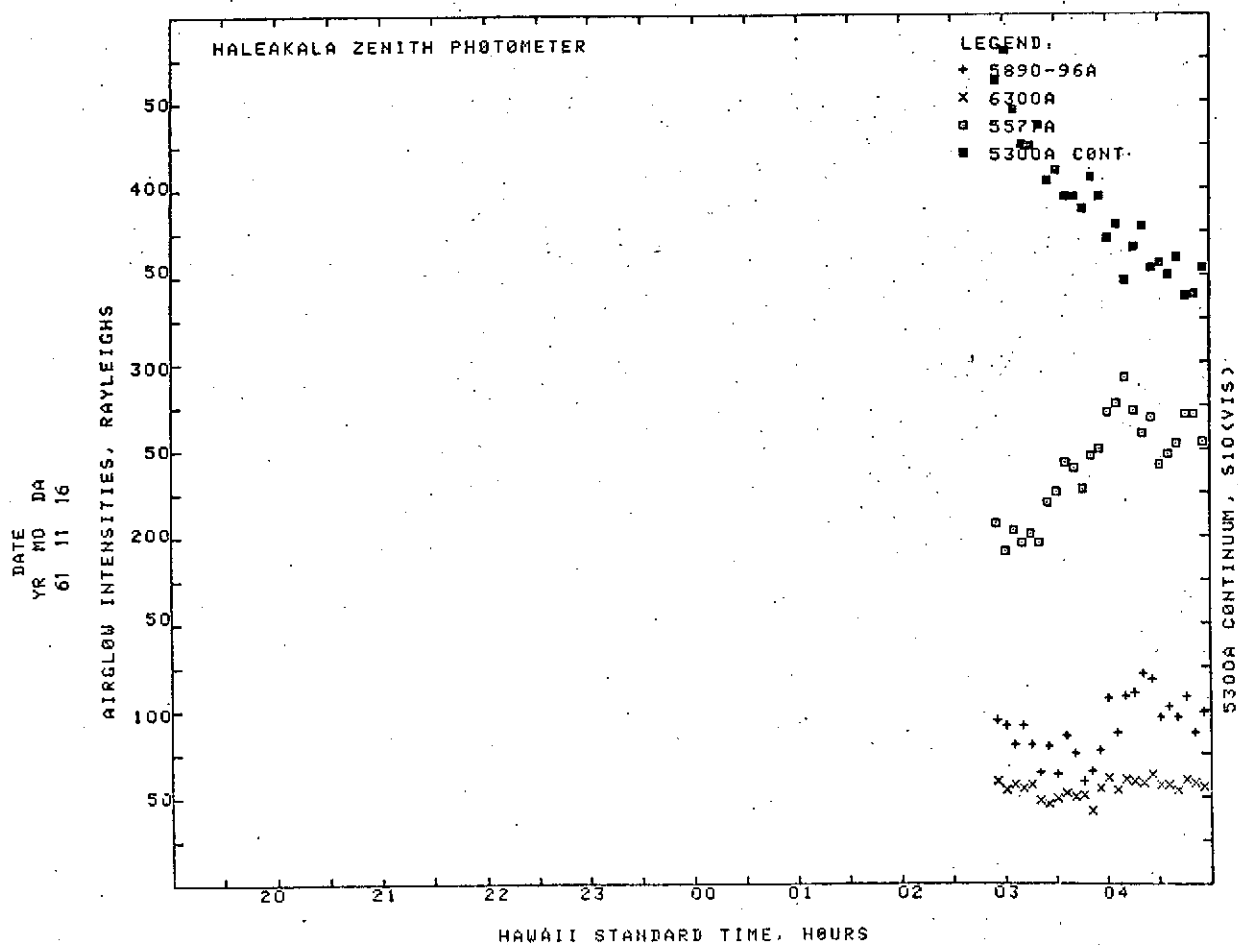
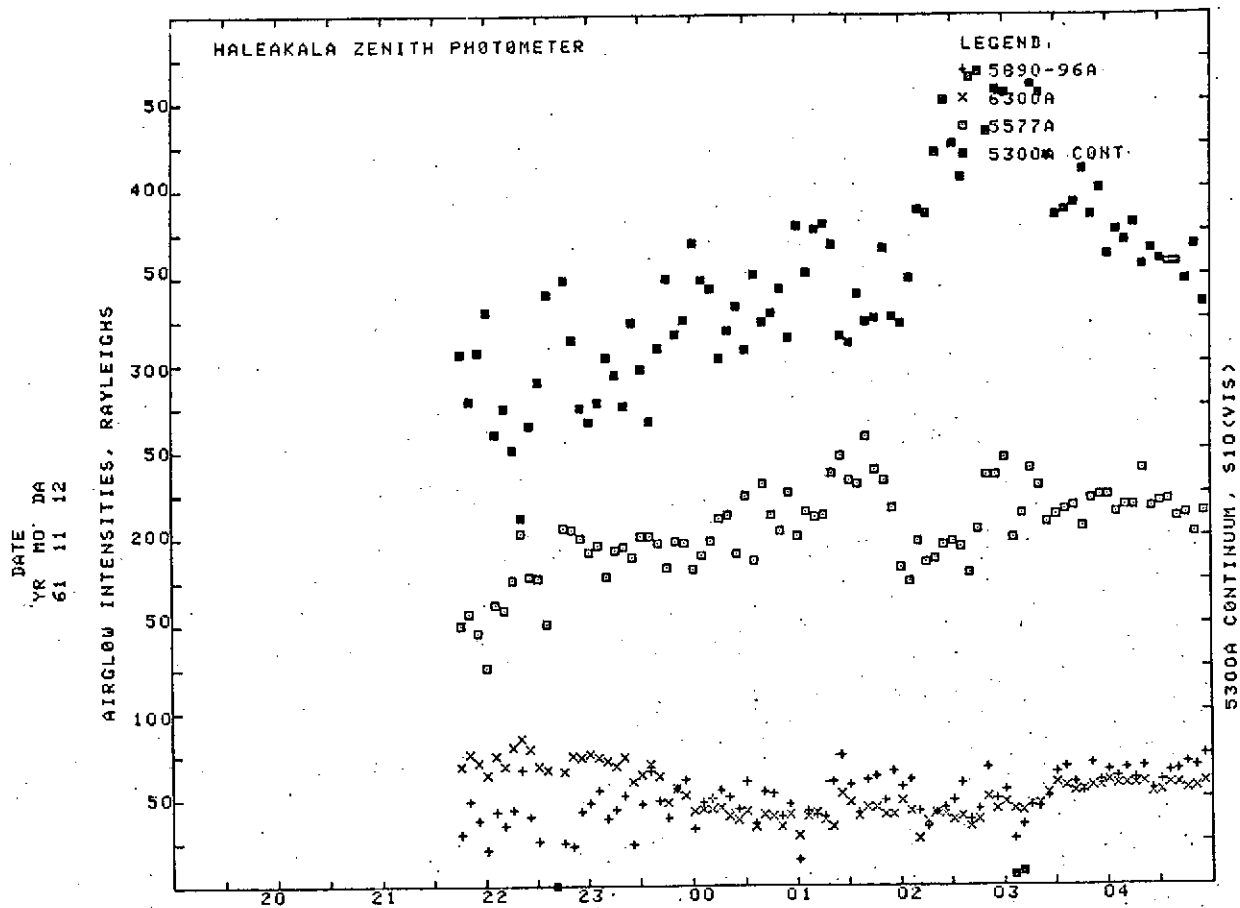


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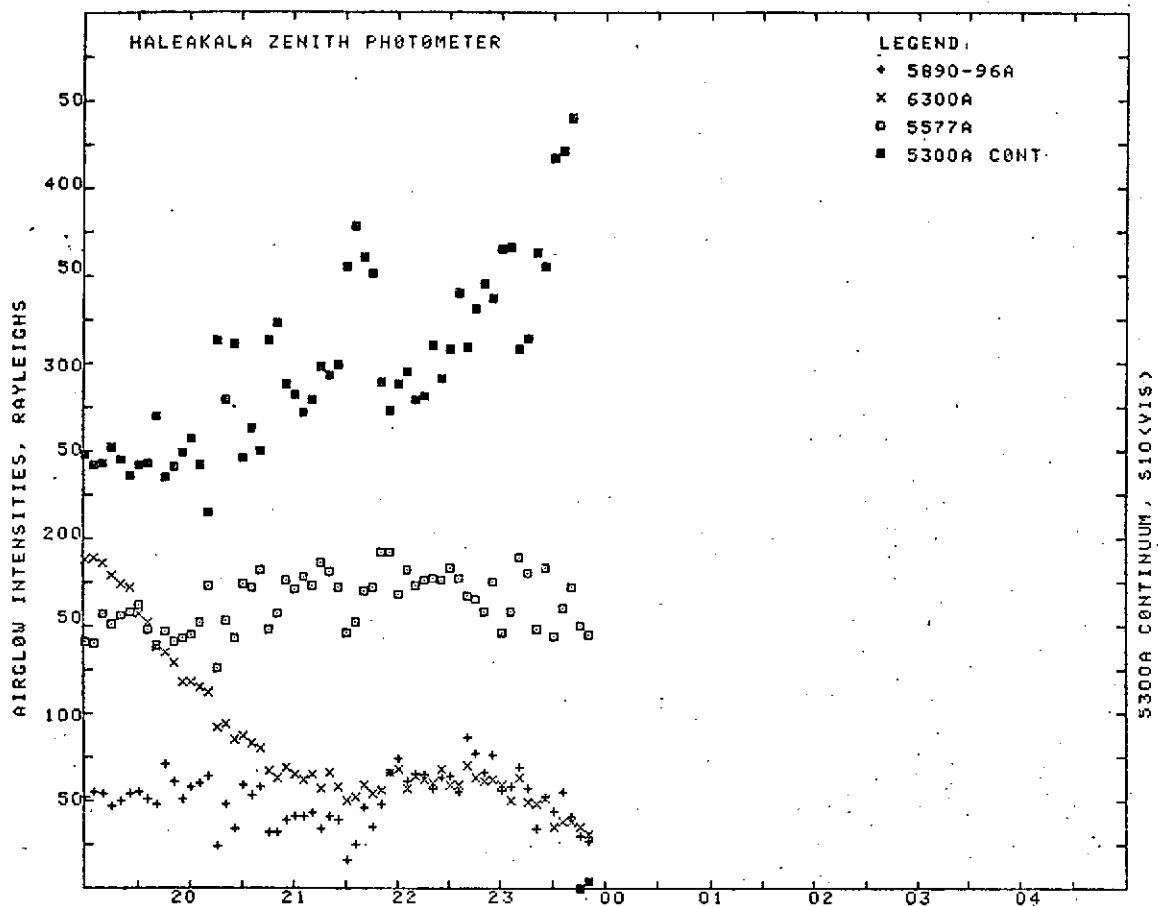




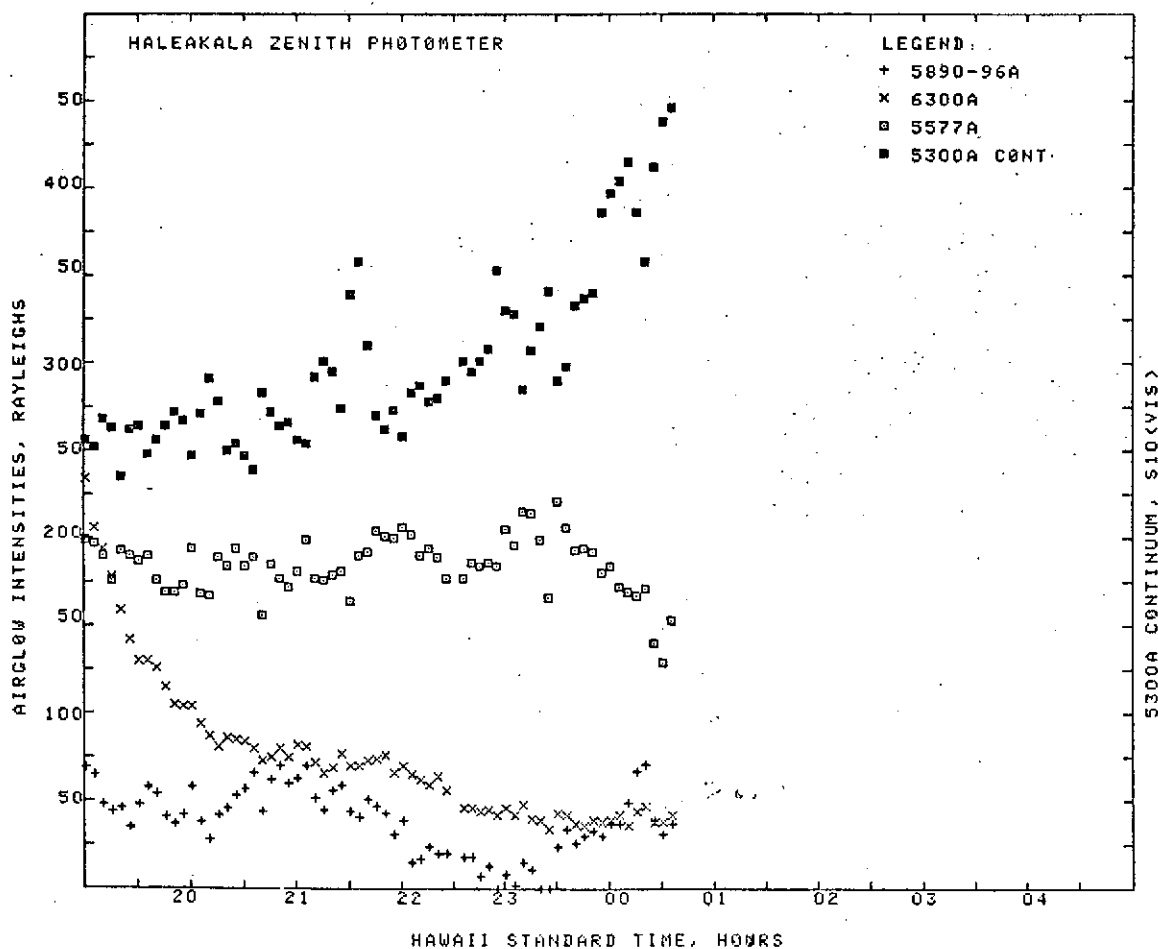


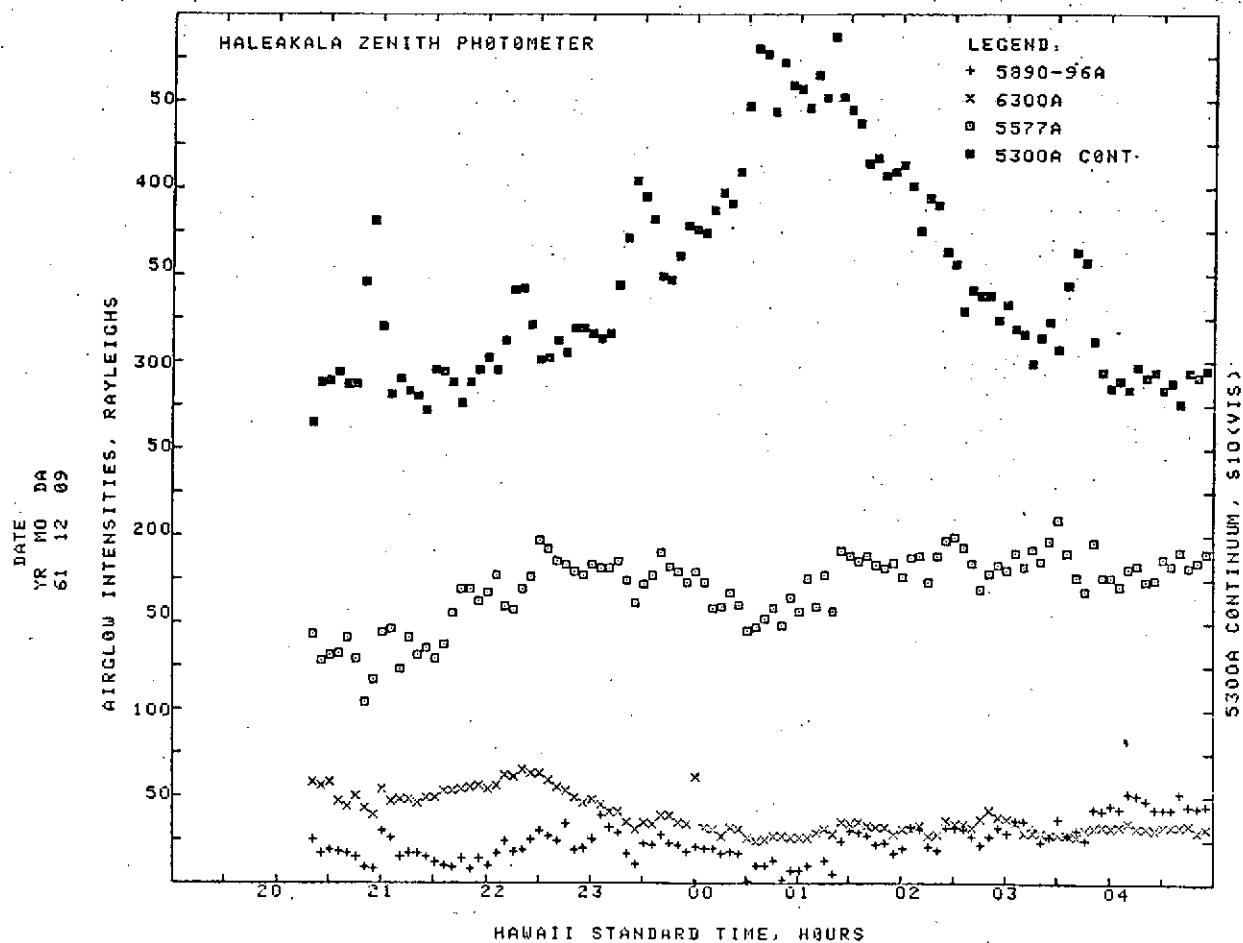
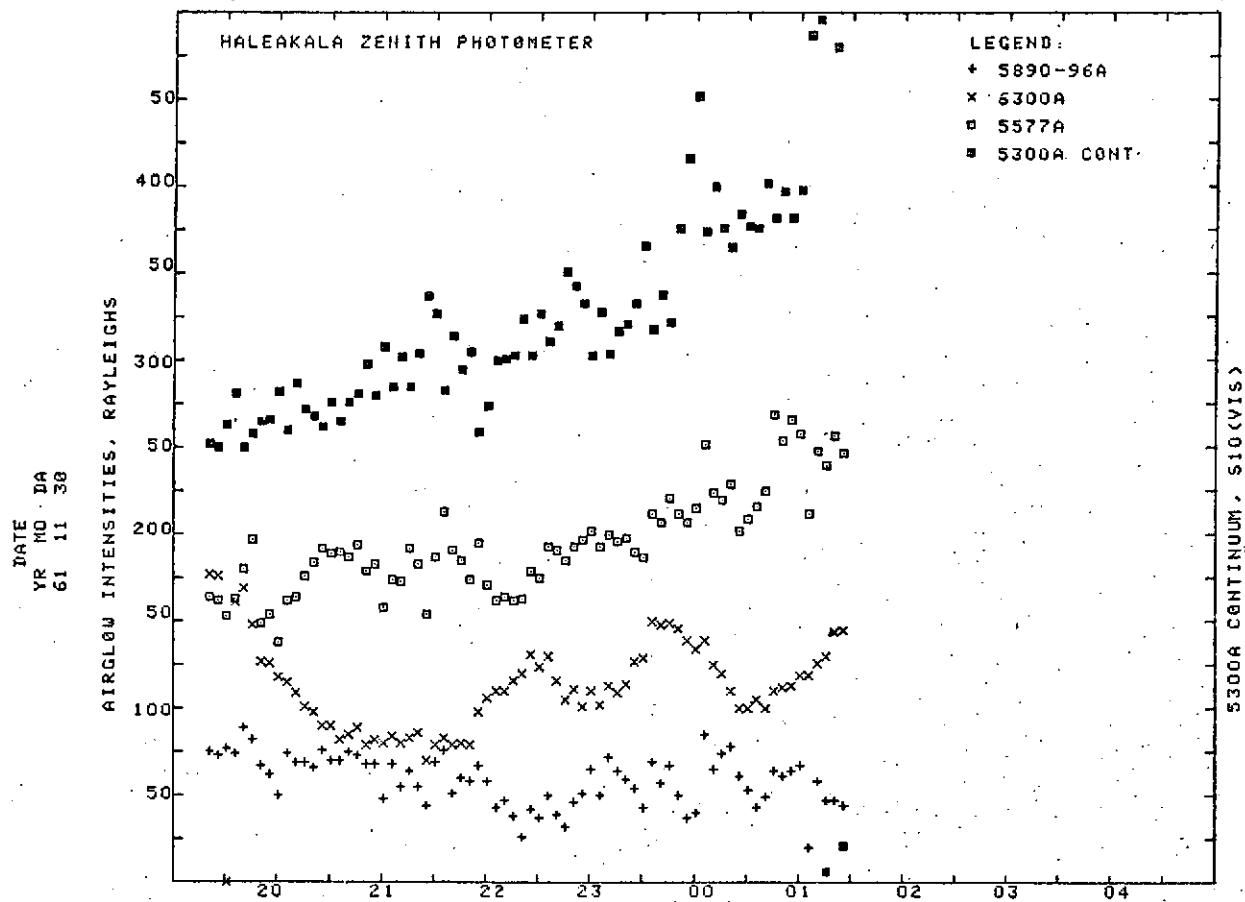


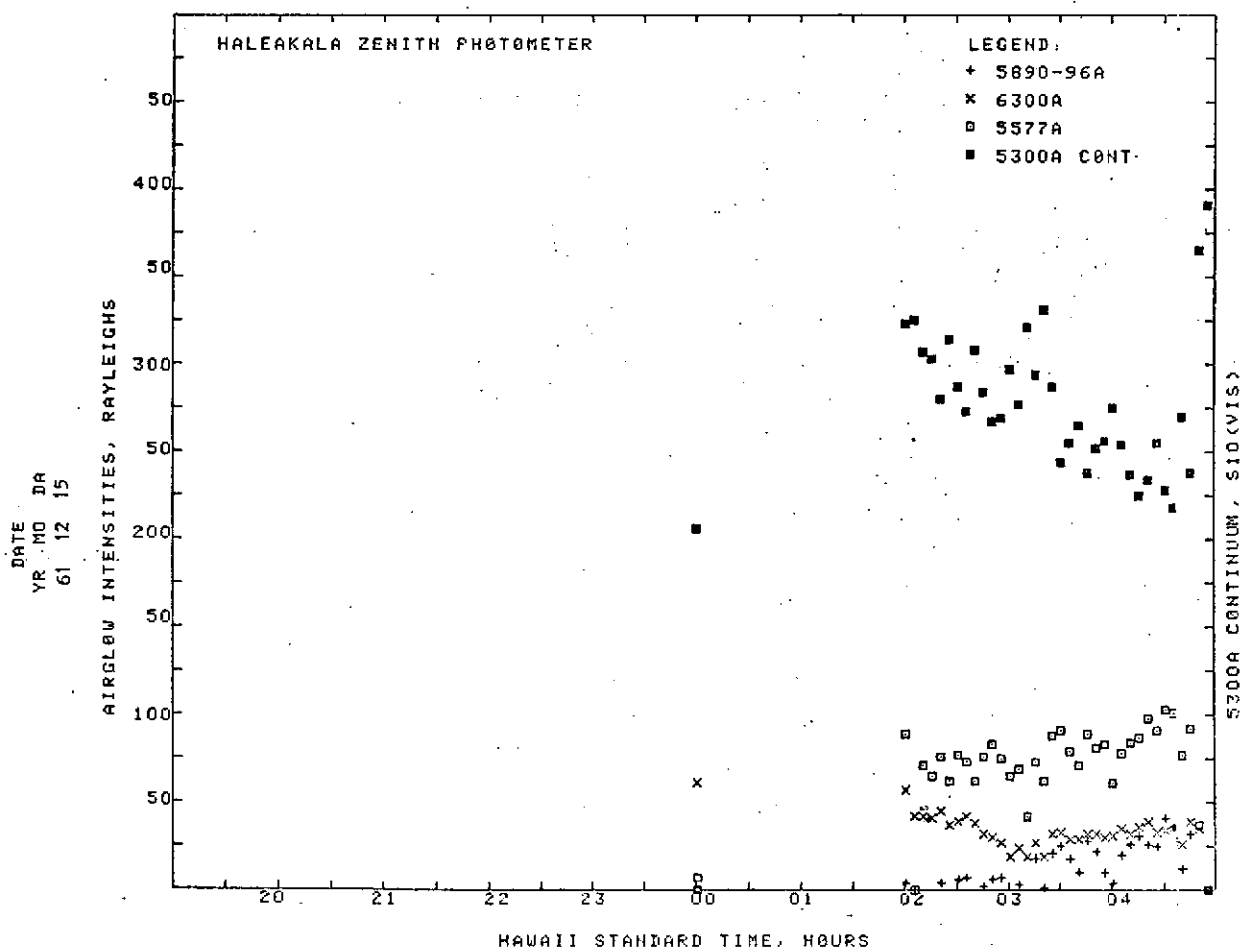
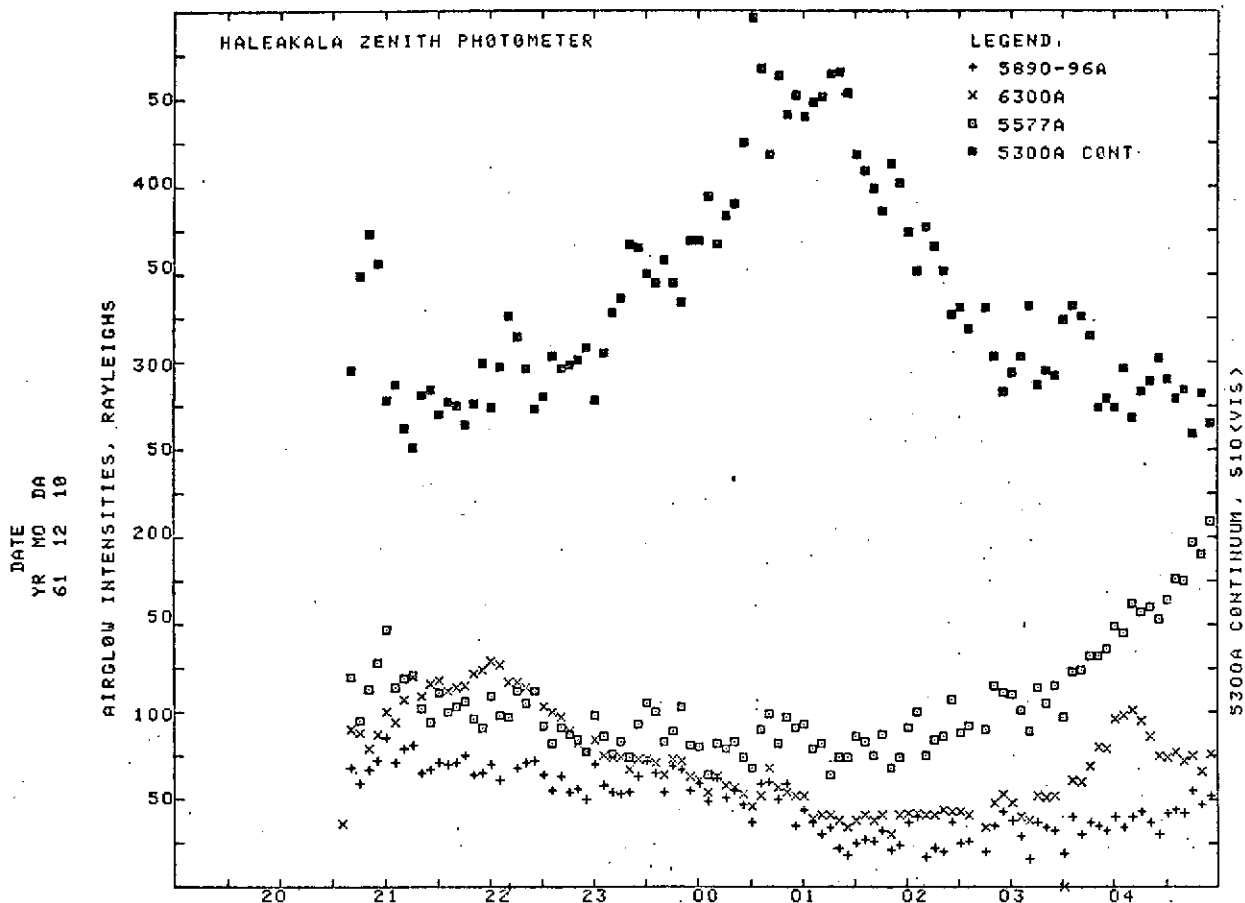
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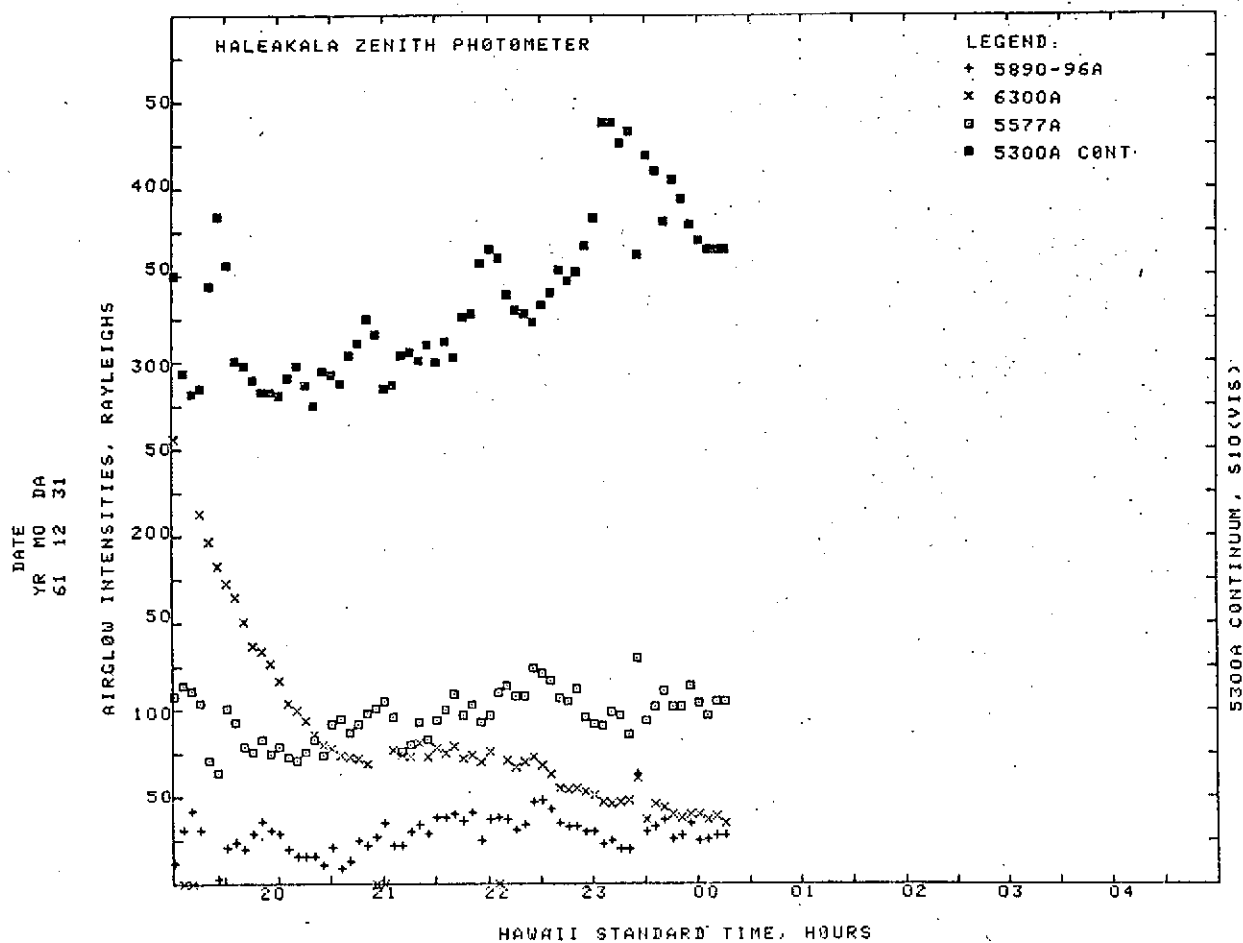
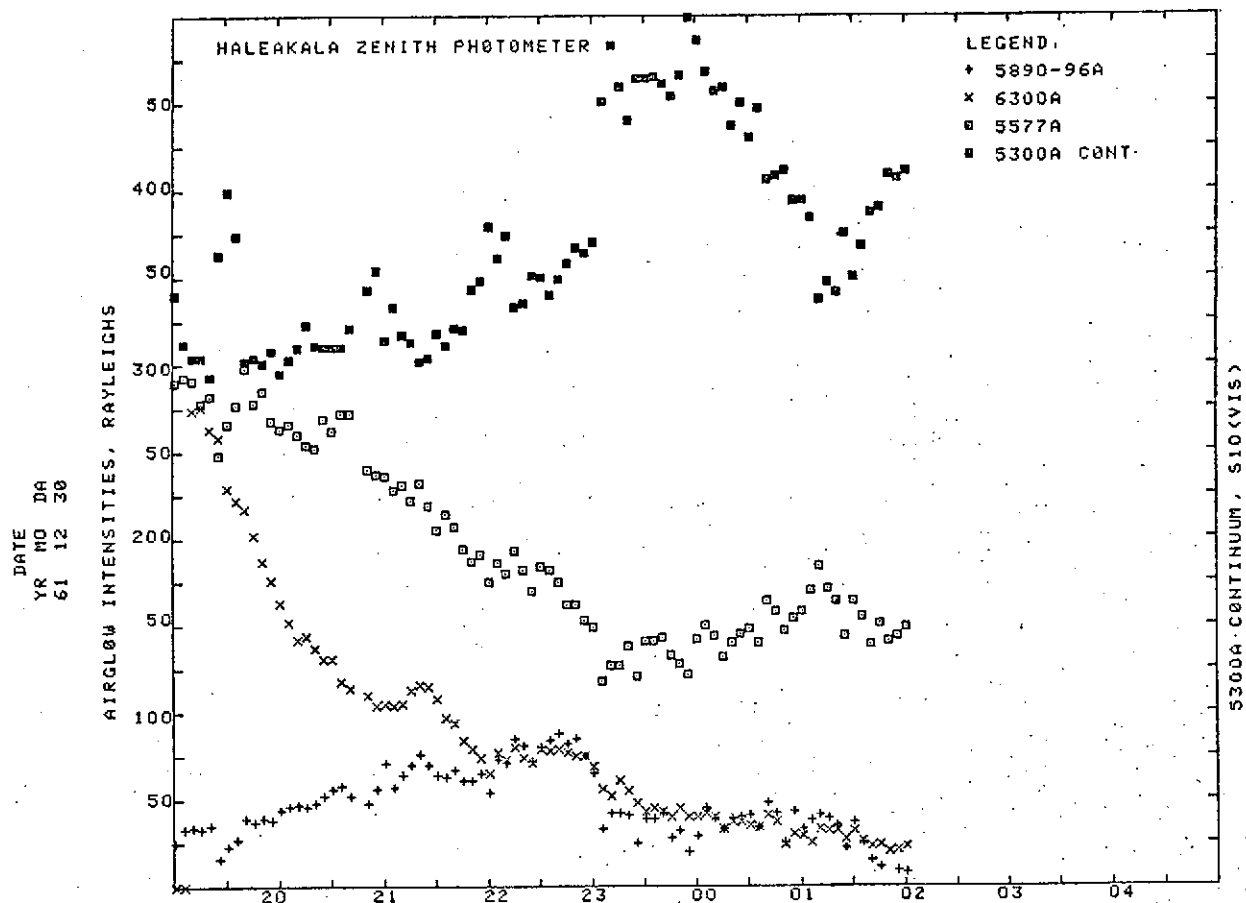


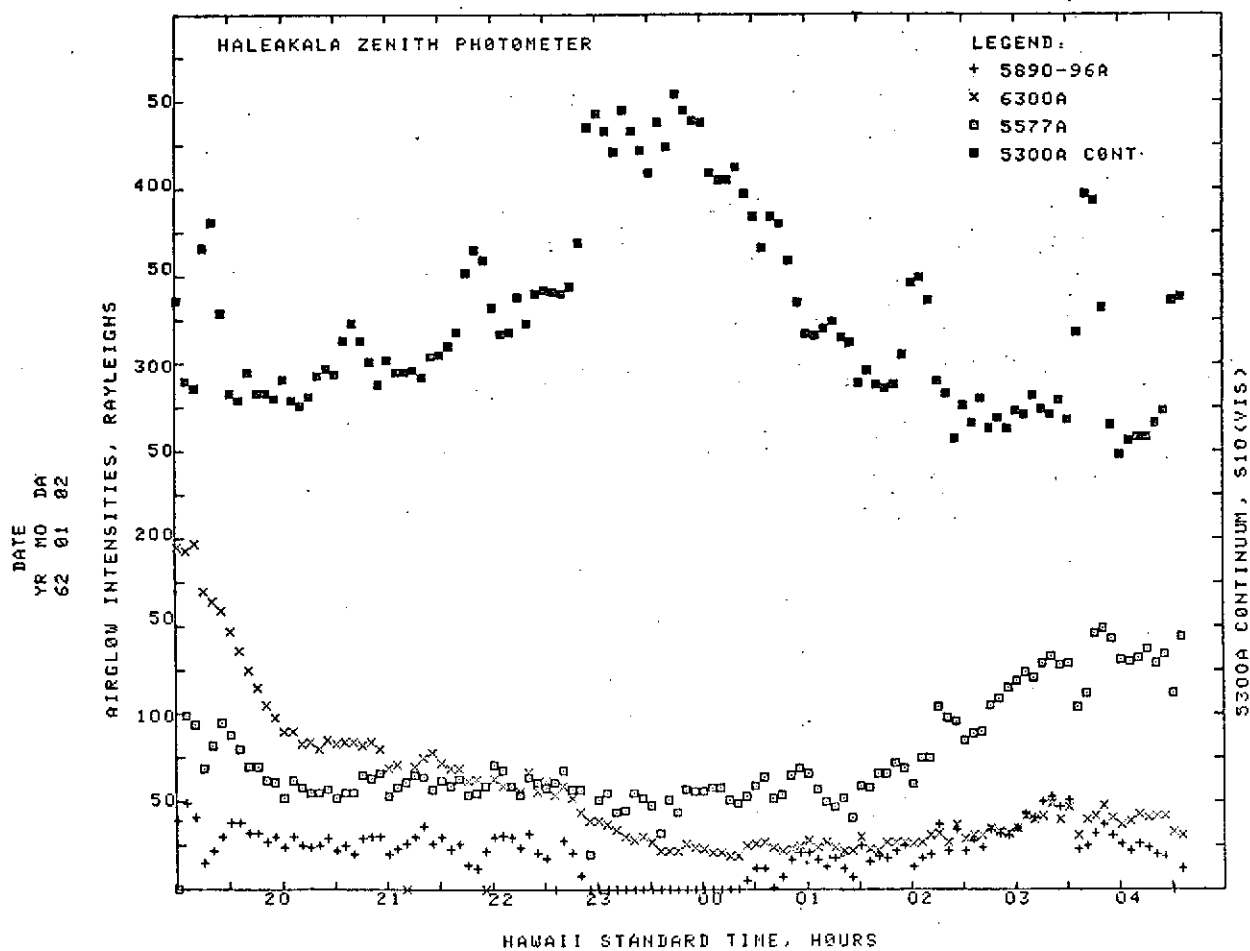
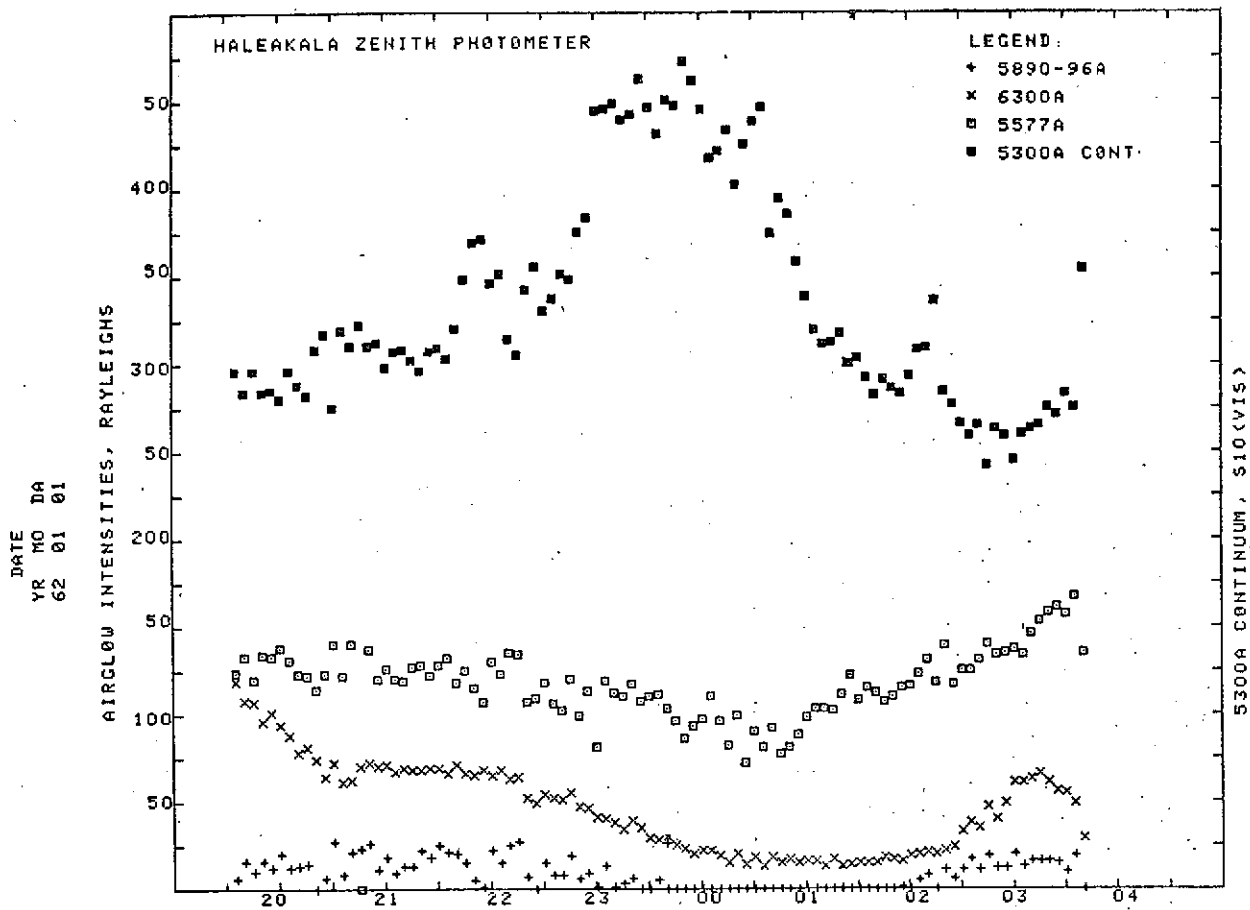
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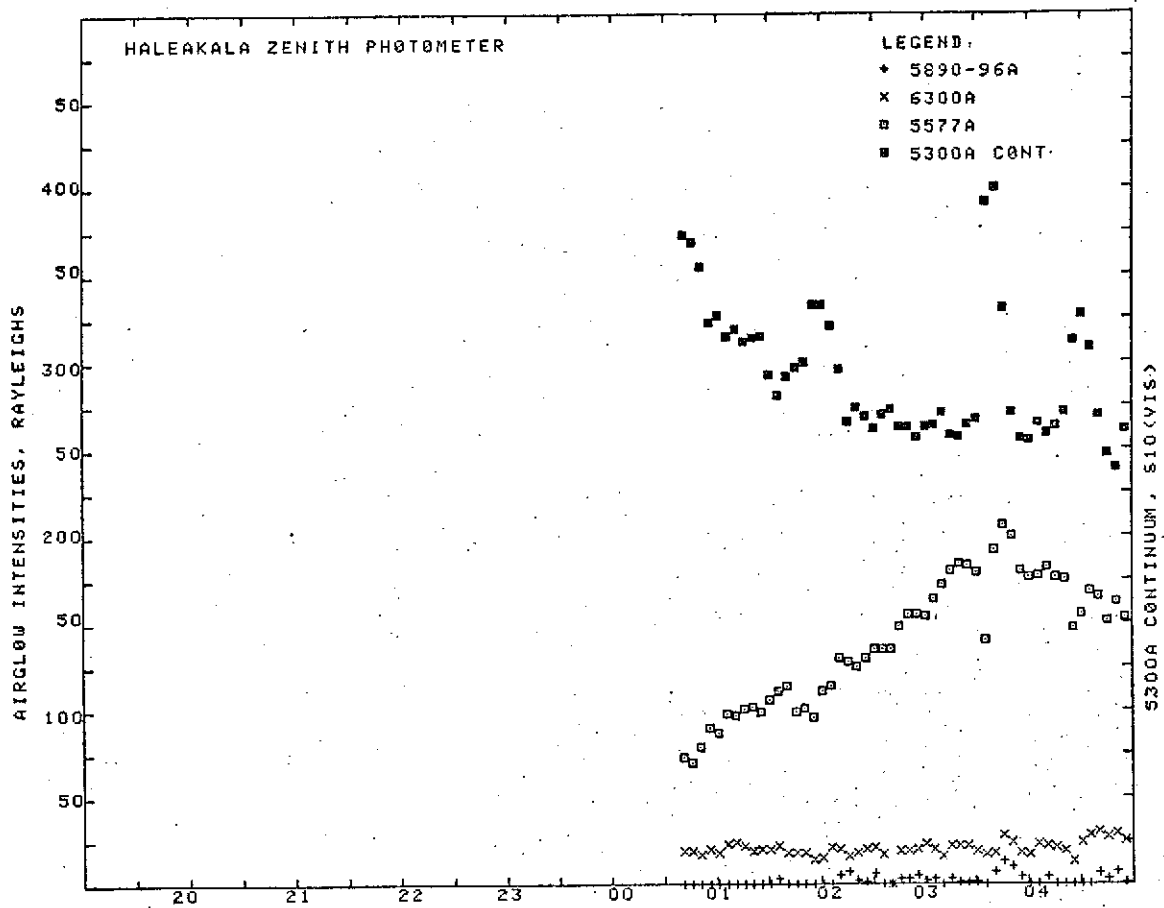




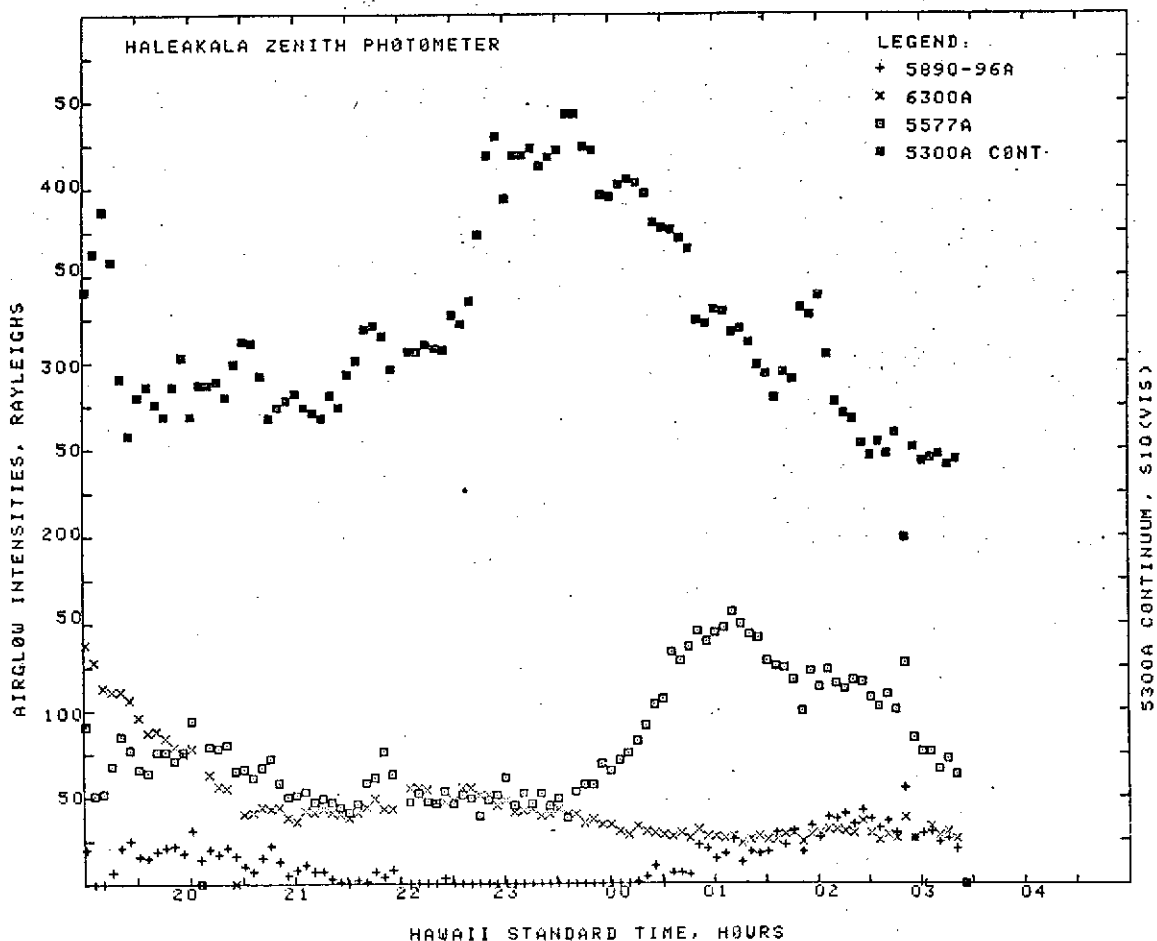




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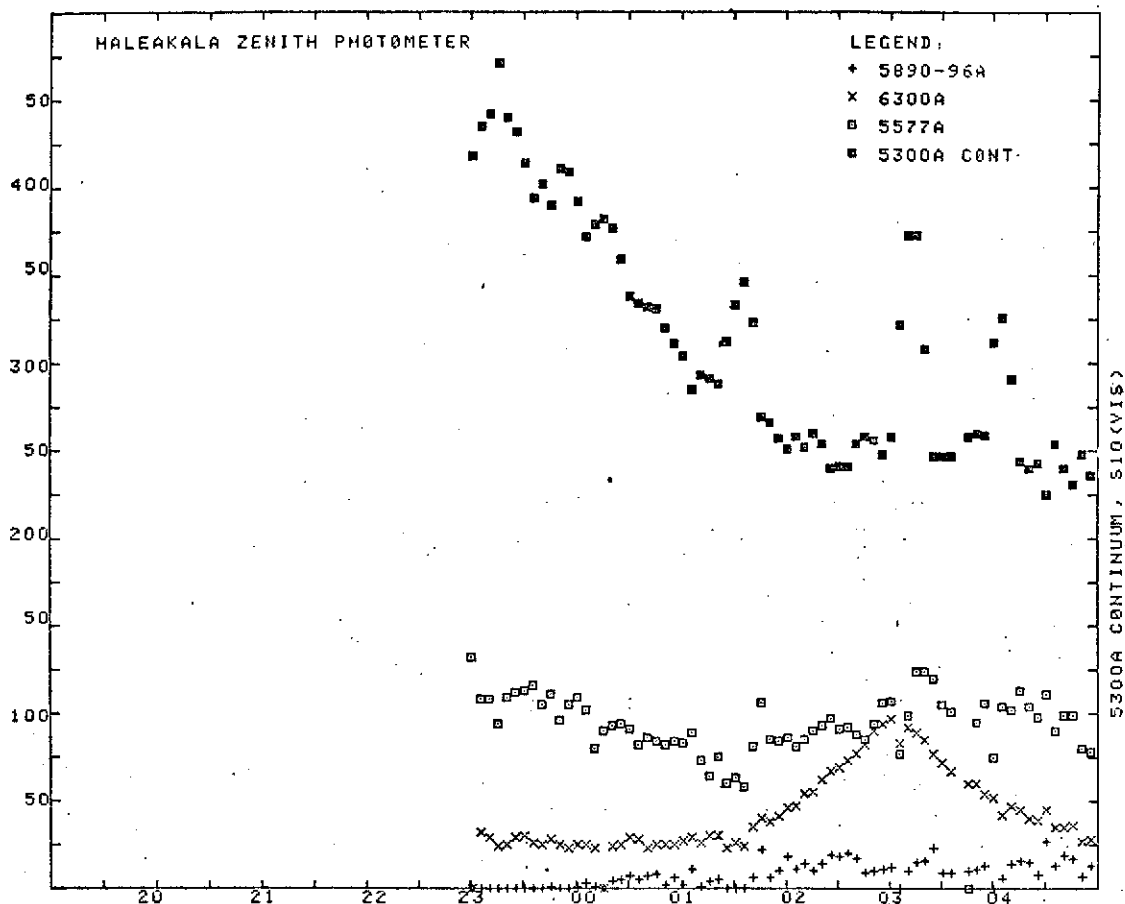


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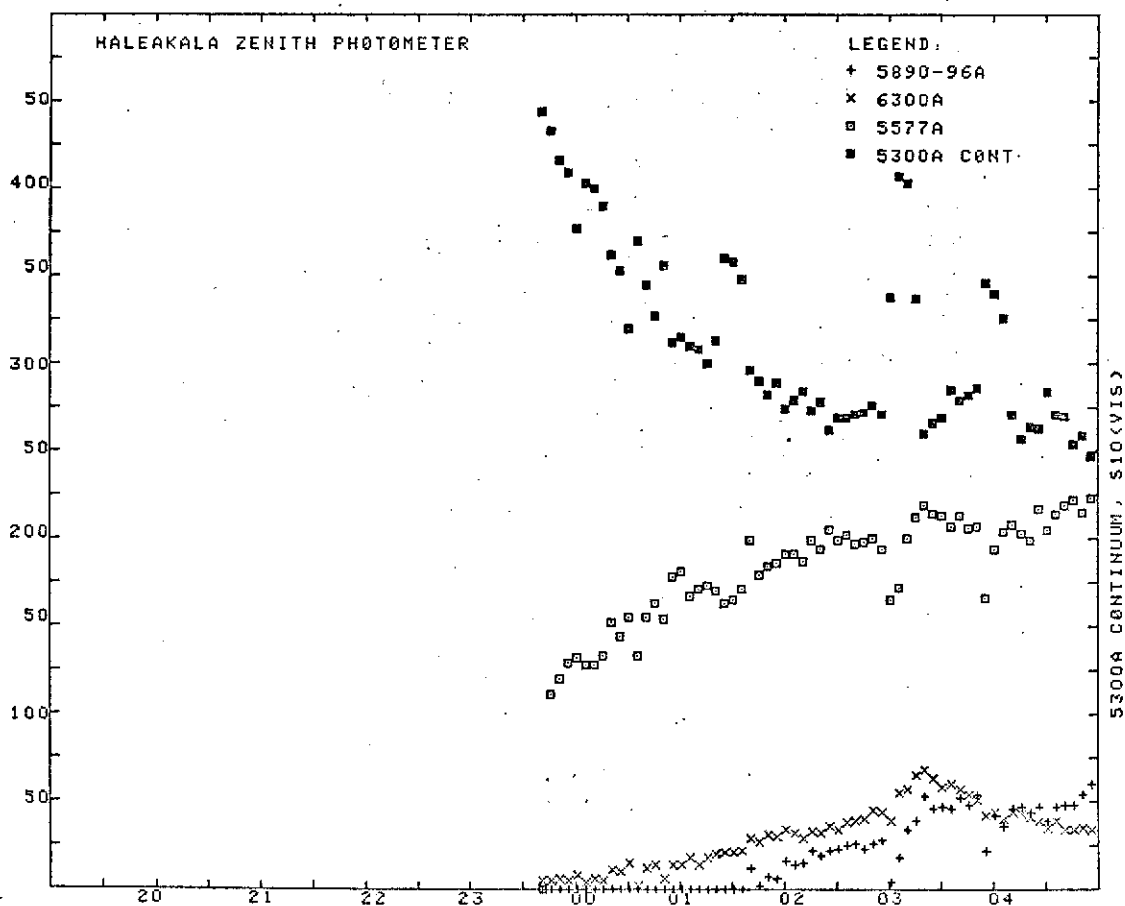
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AIRGLOW INTENSITIES, RAYLEIGHS



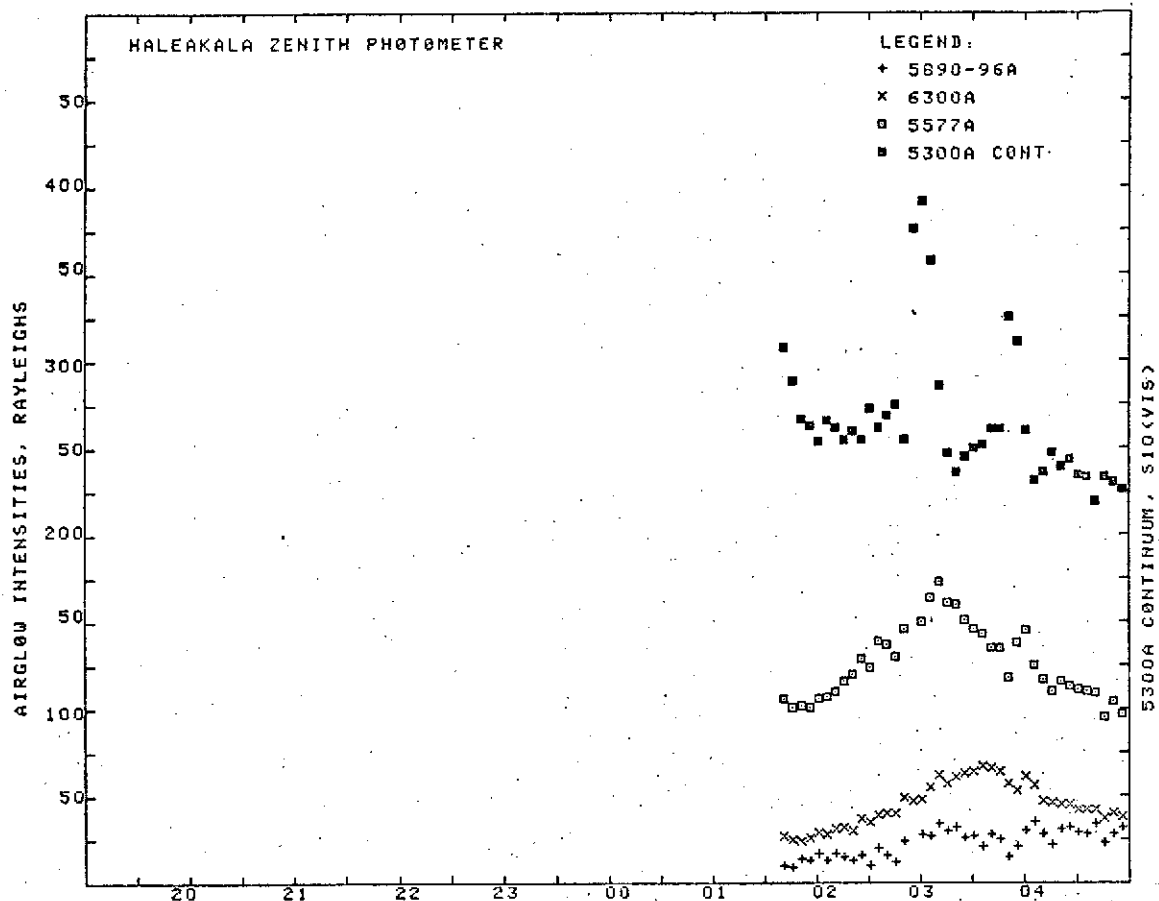
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AIRGLOW INTENSITIES, RAYLEIGHS

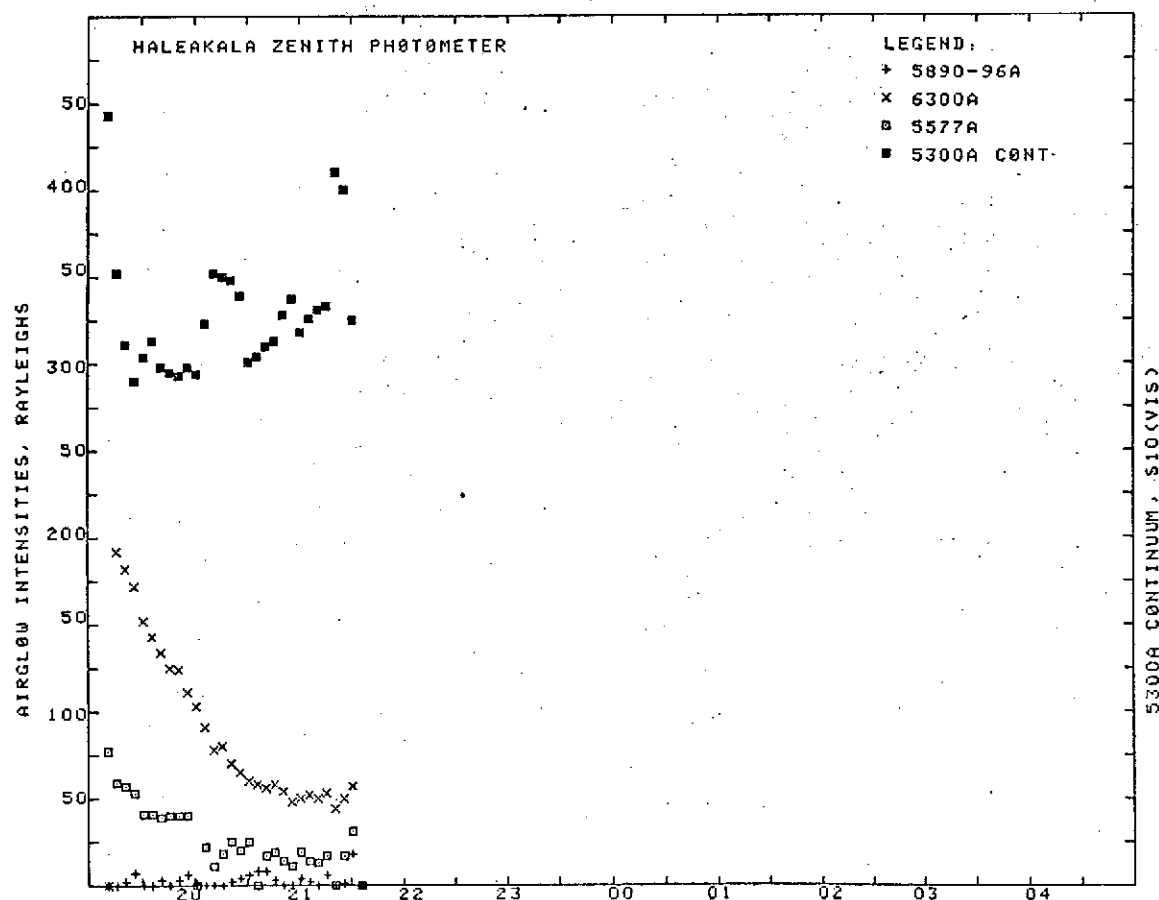


HAWAII STANDARD TIME, HOURS

DATE  
YR MO DA  
62 01 13



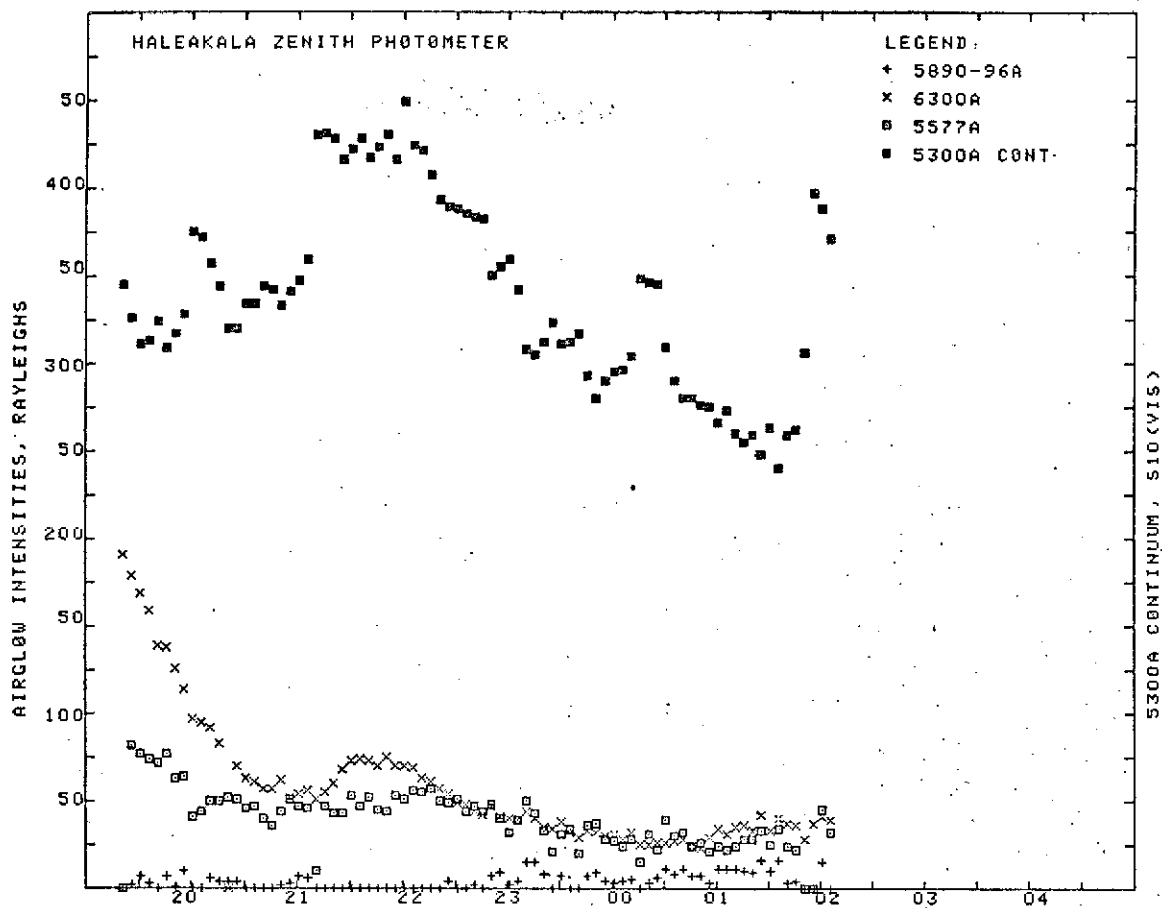
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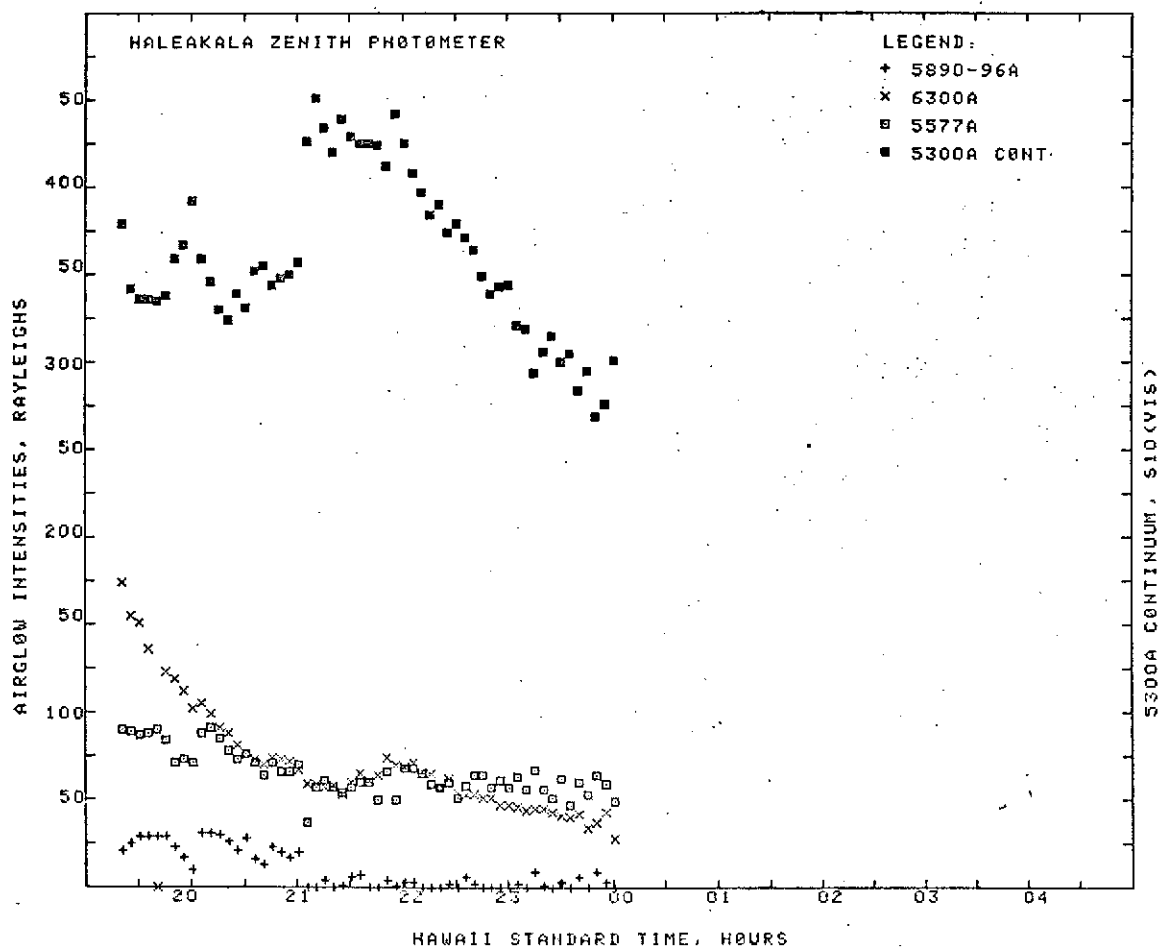
HAWAII STANDARD TIME, HOURS



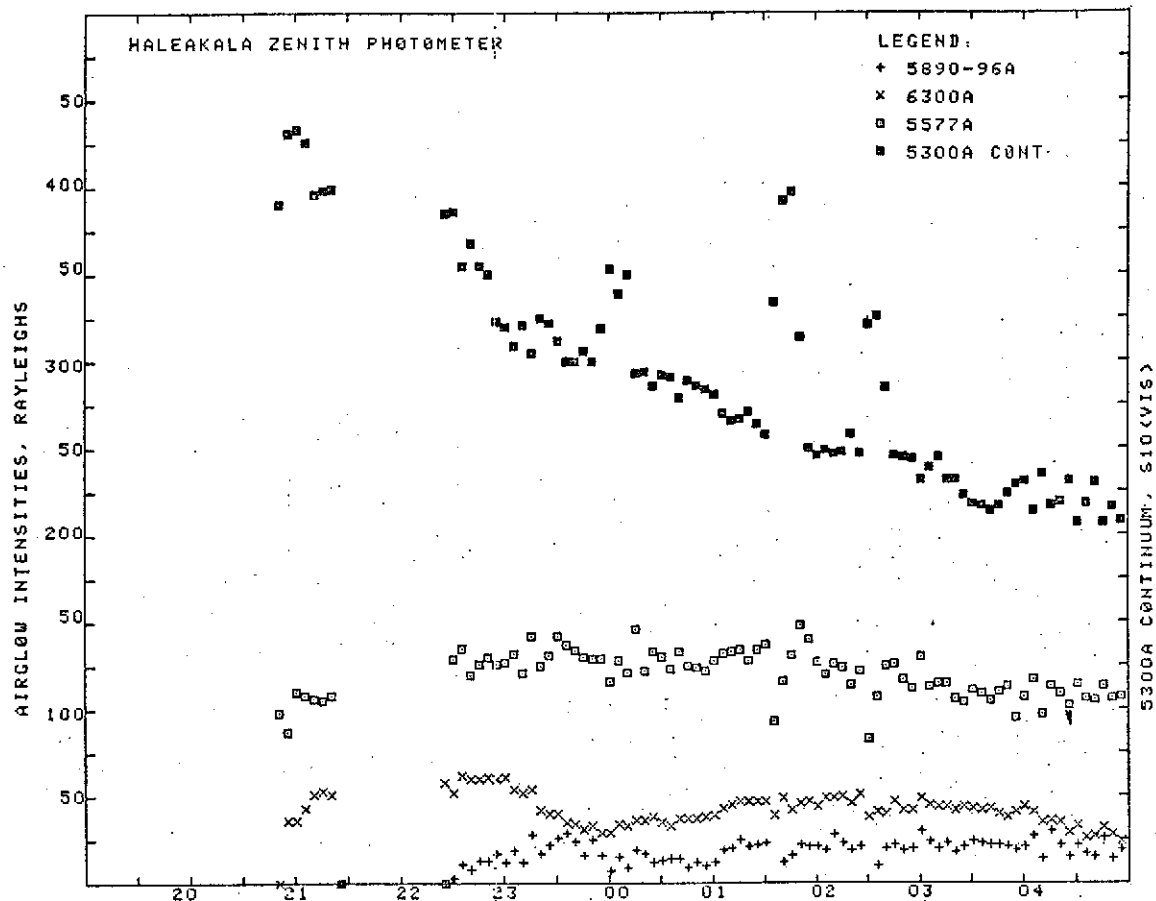
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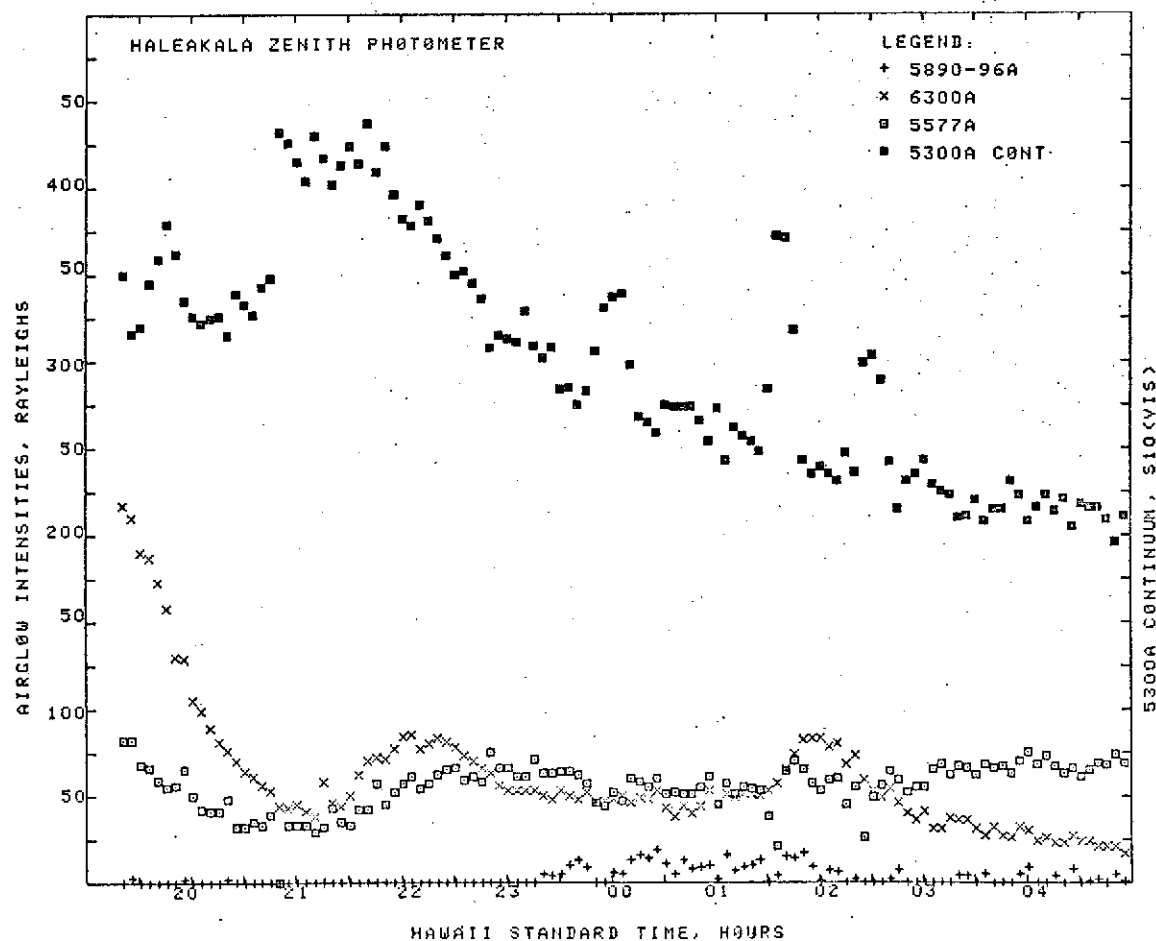
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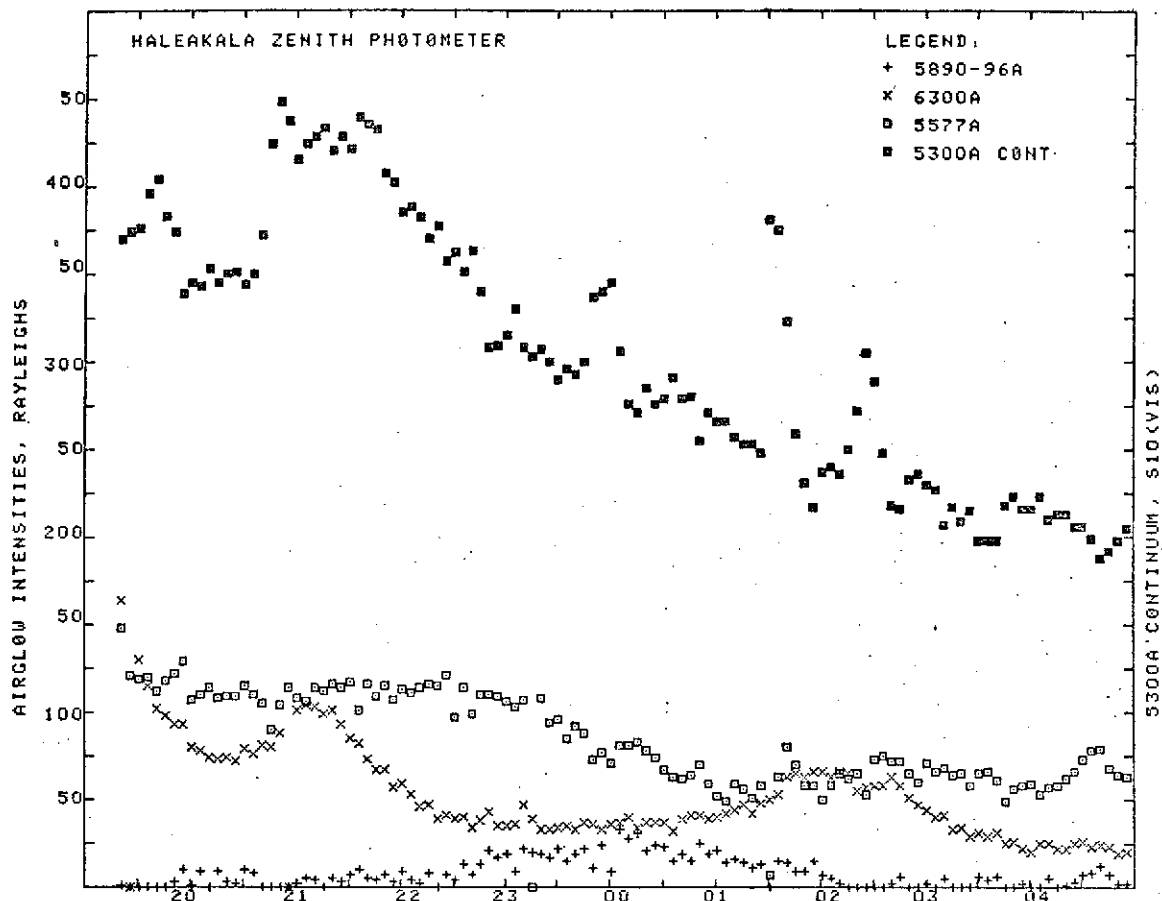
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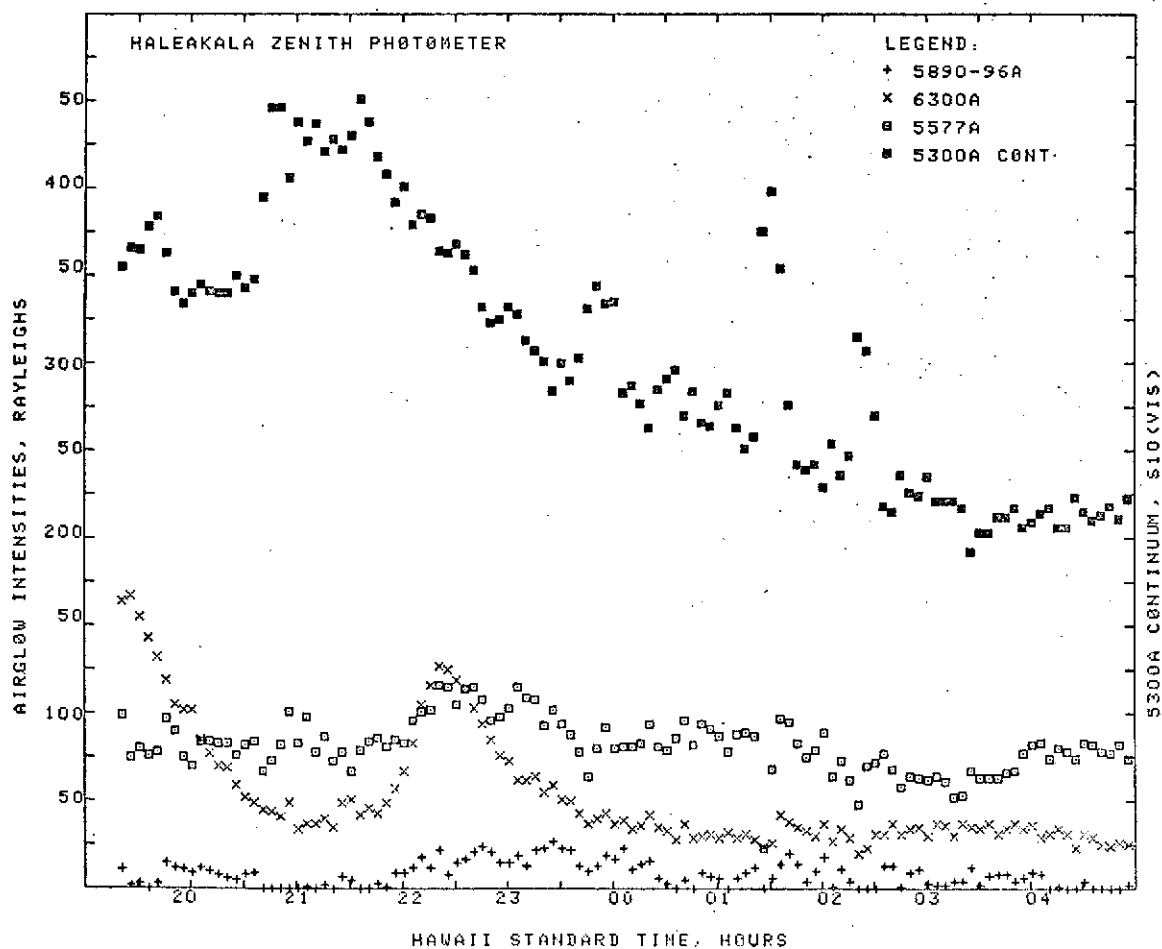
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DATE  
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62 02 04

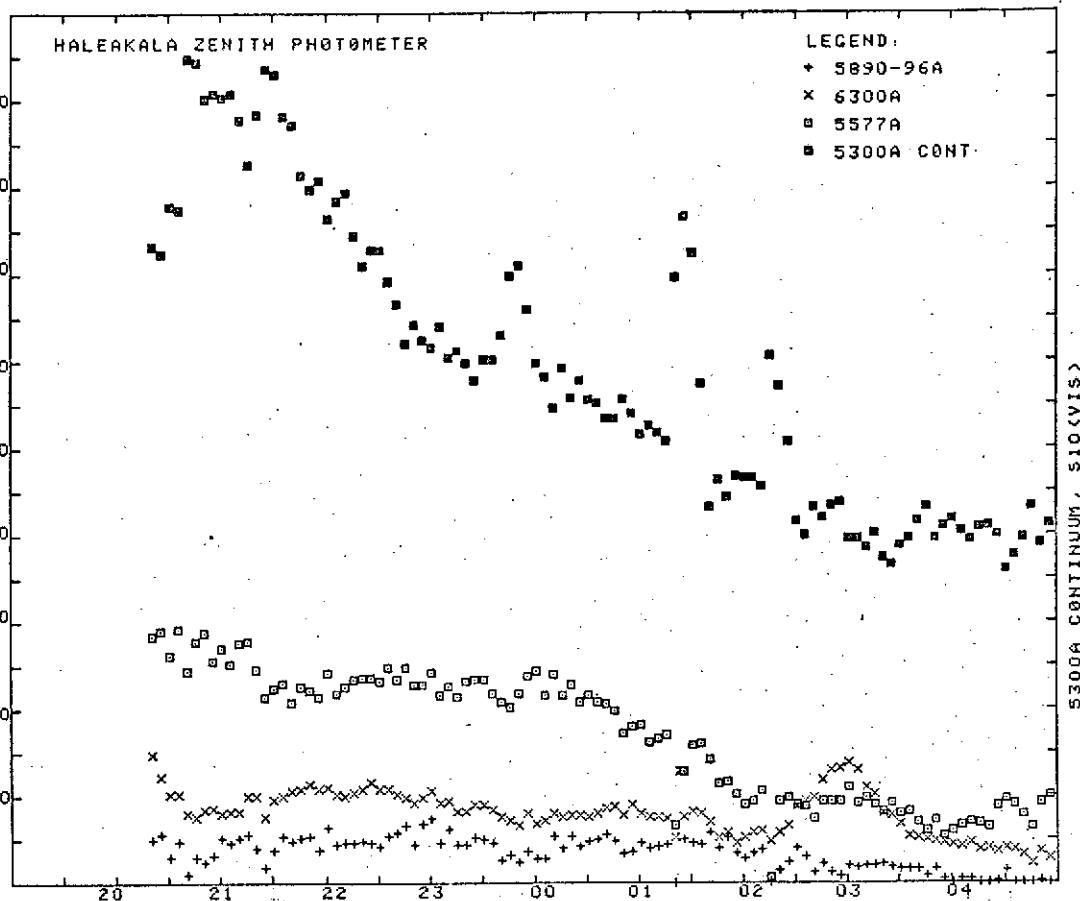


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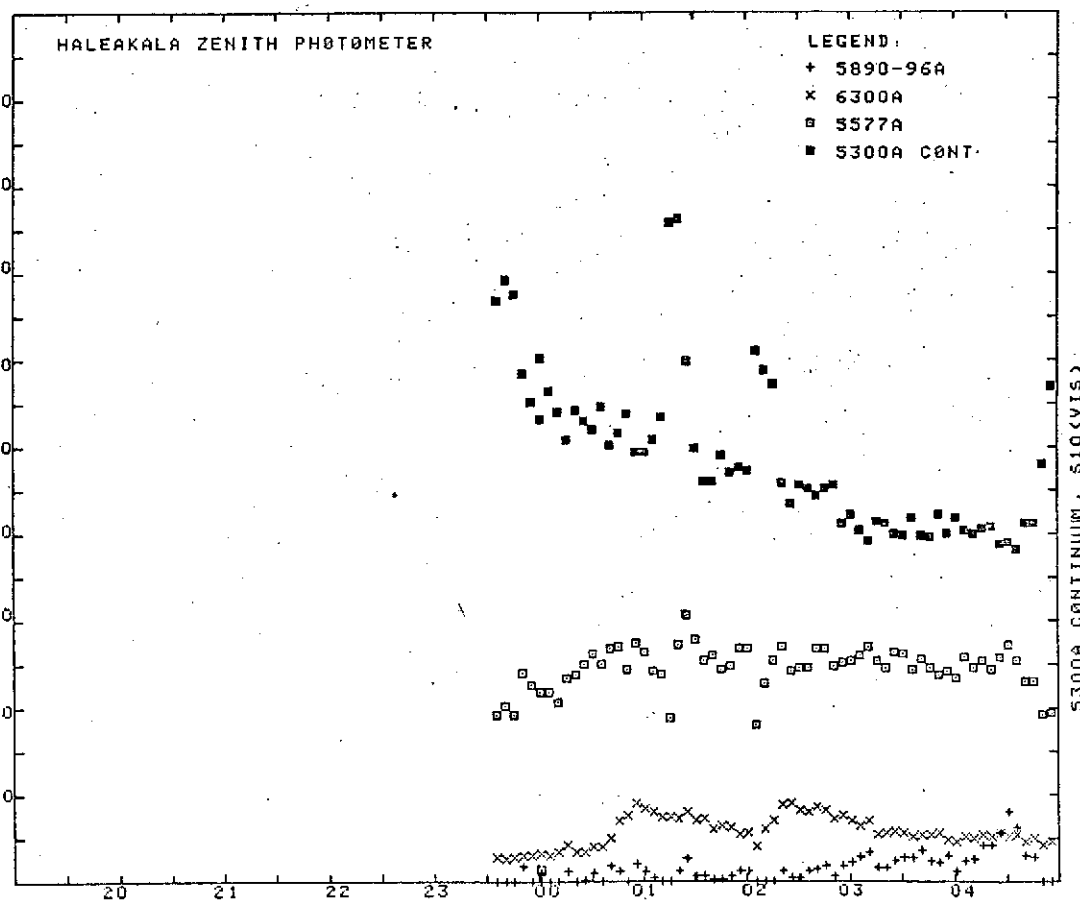
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AIRGLOW INTENSITIES, RAYLEIGHS



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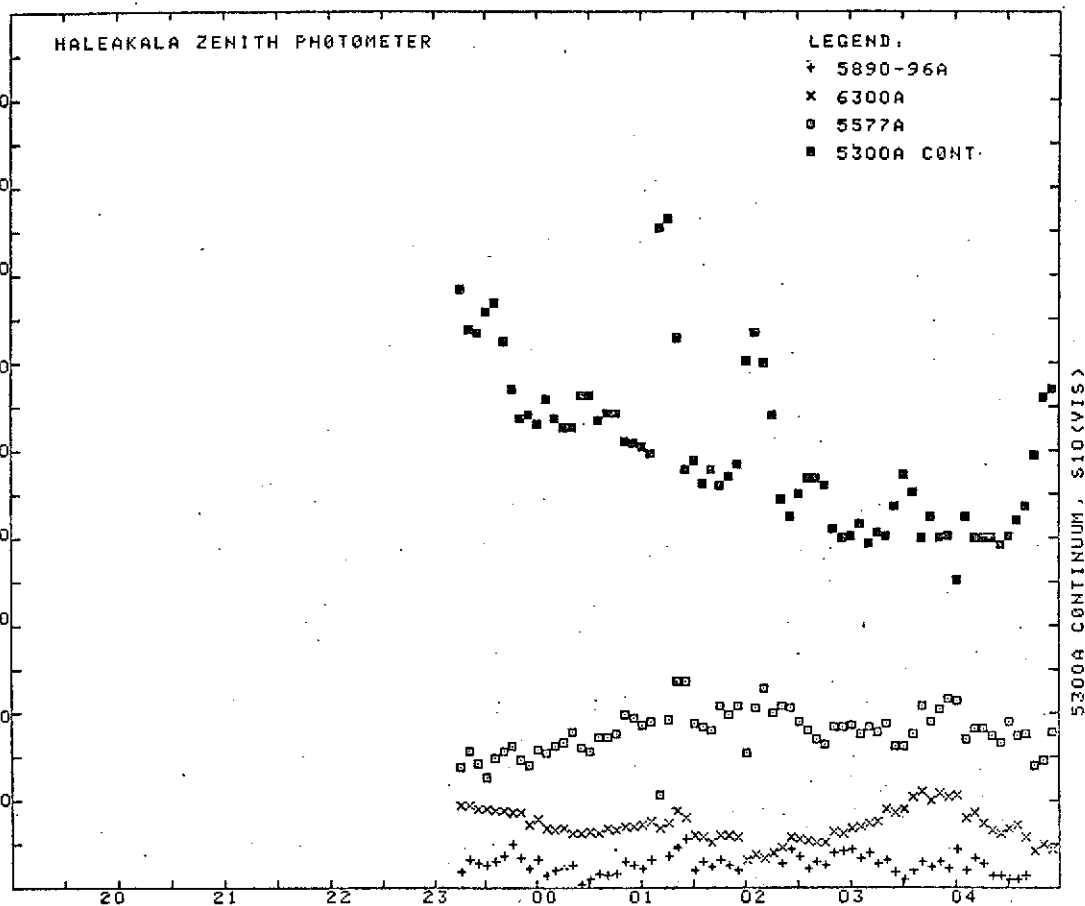
AIRGLOW INTENSITIES, RAYLEIGHS



HAWAII STANDARD TIME, HOURS

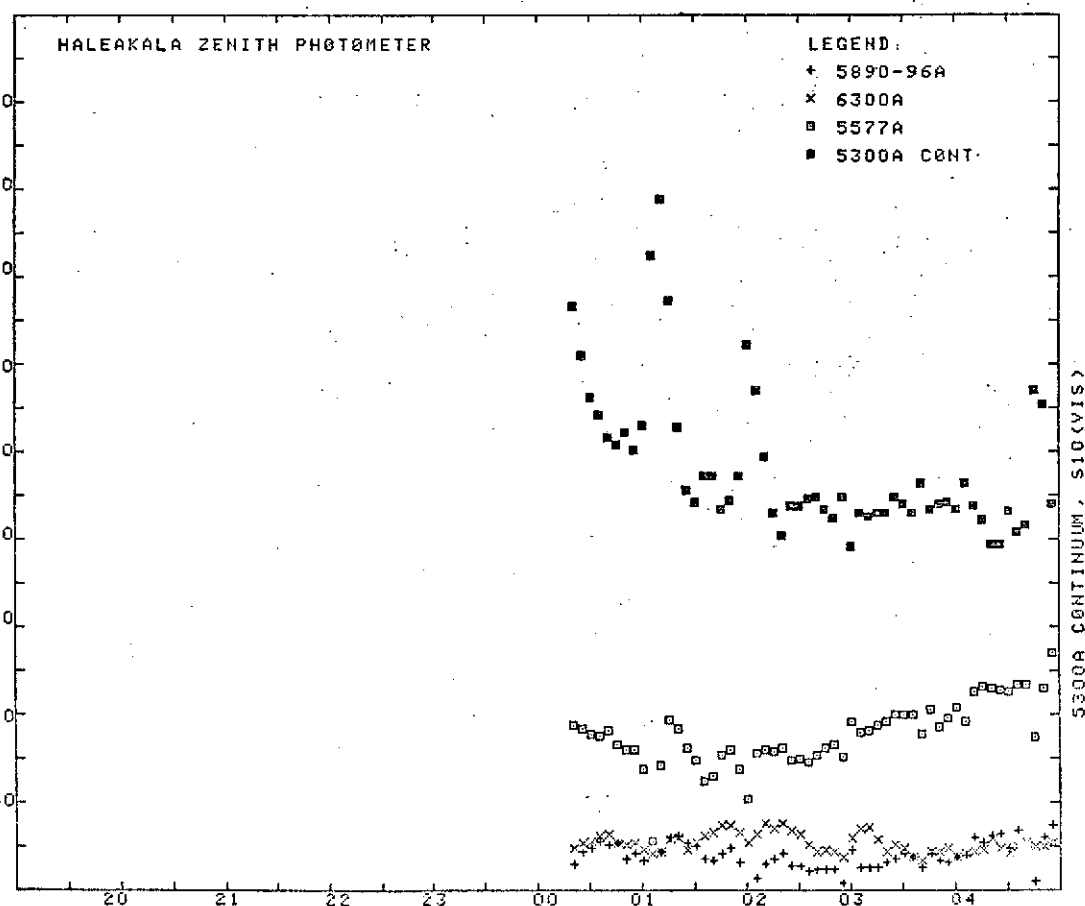
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AIRGLOW INTENSITIES, RAYLEIGHS

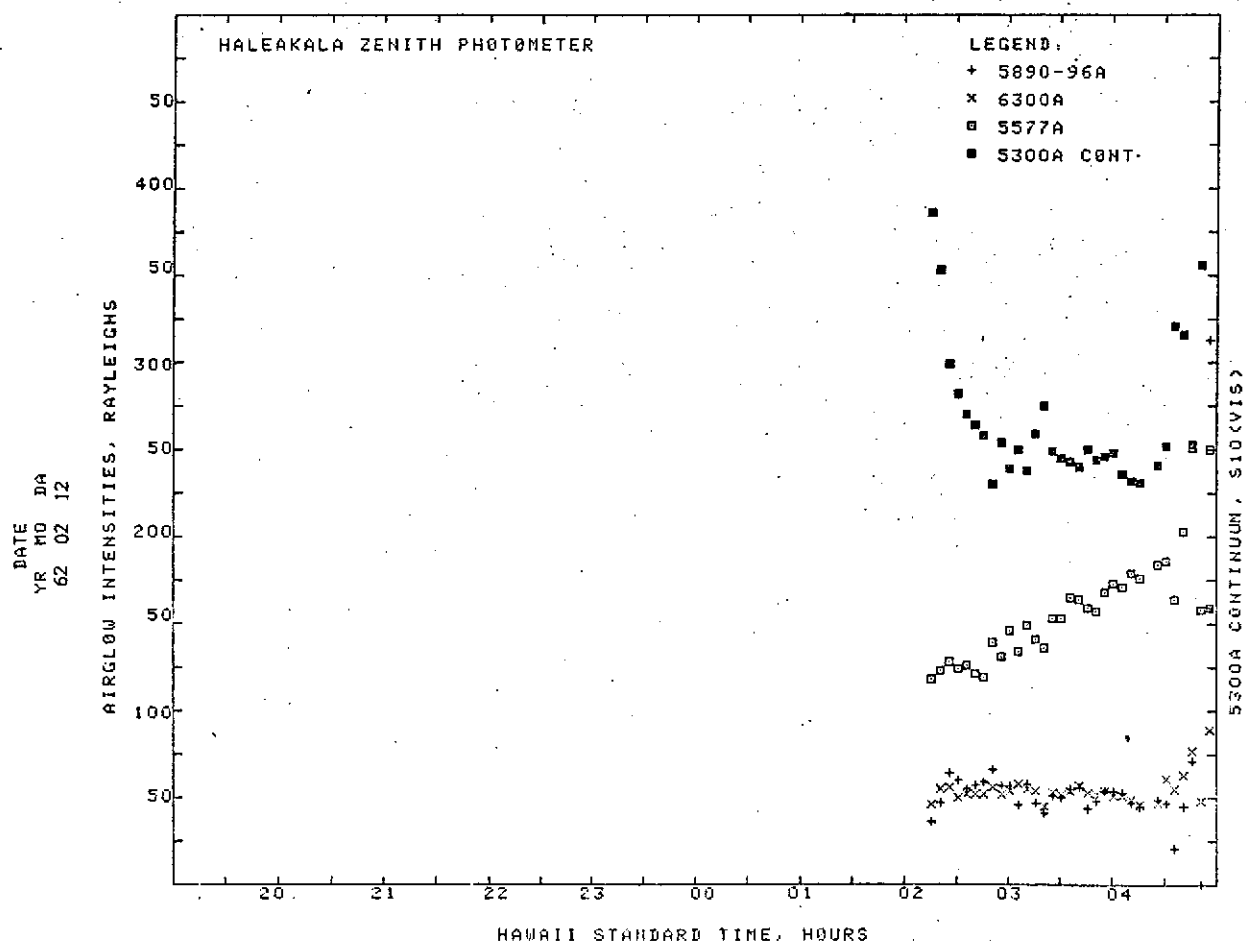
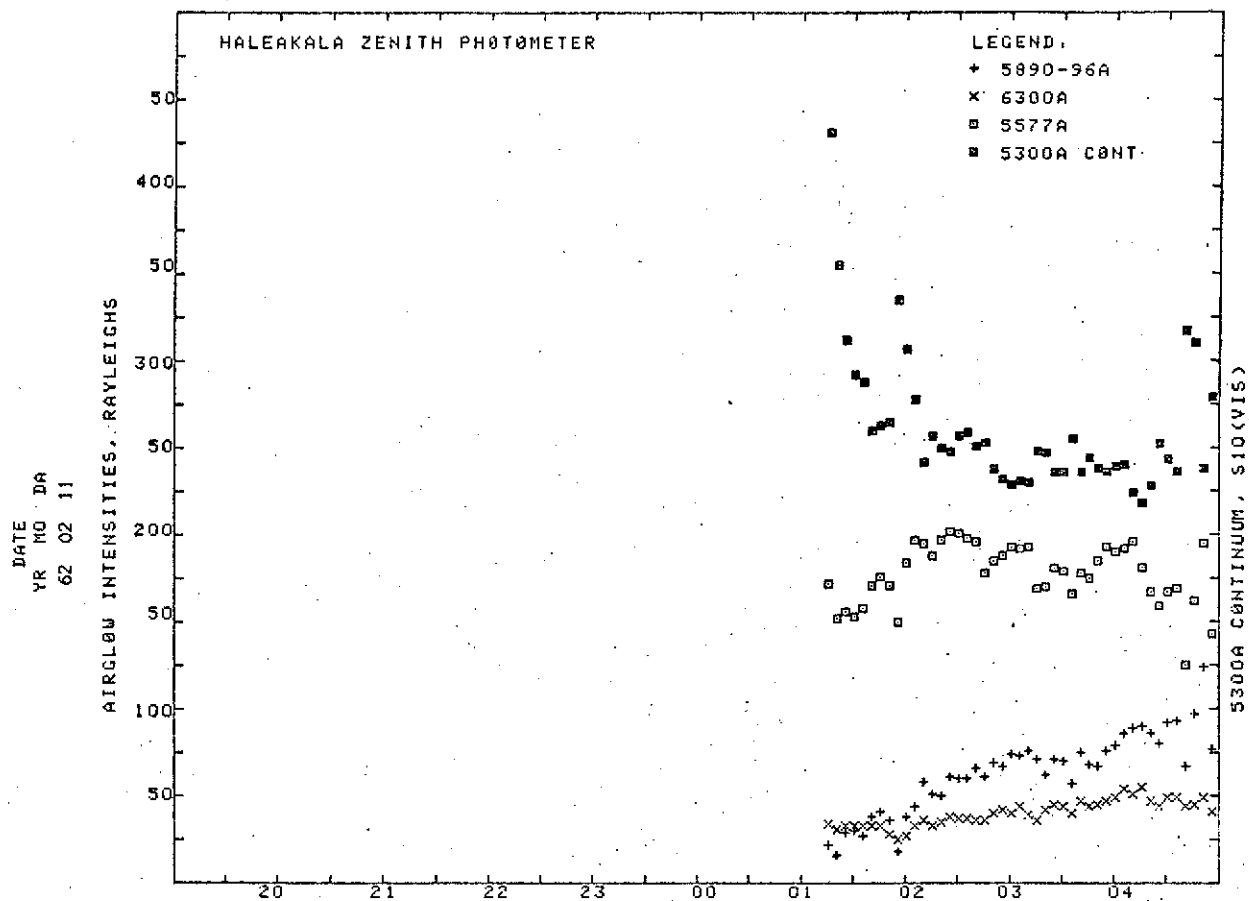


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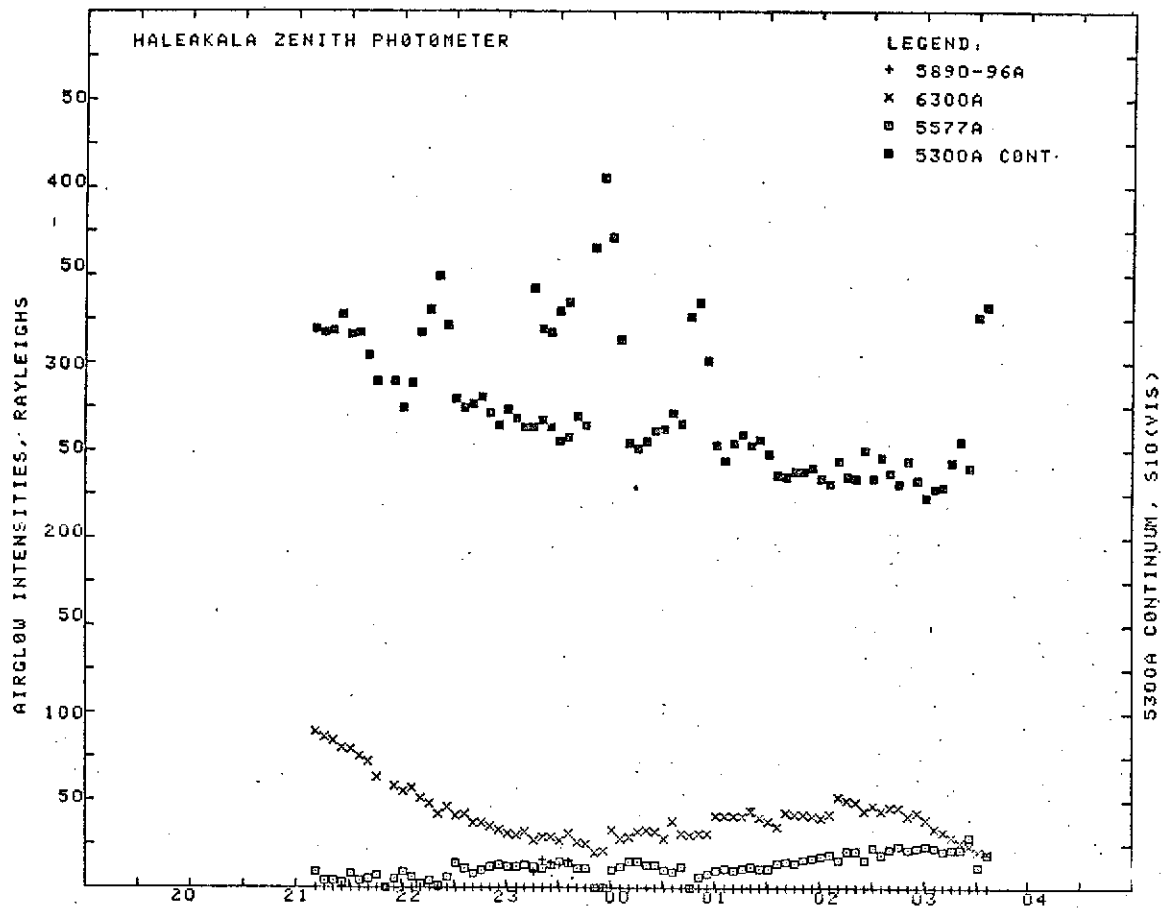
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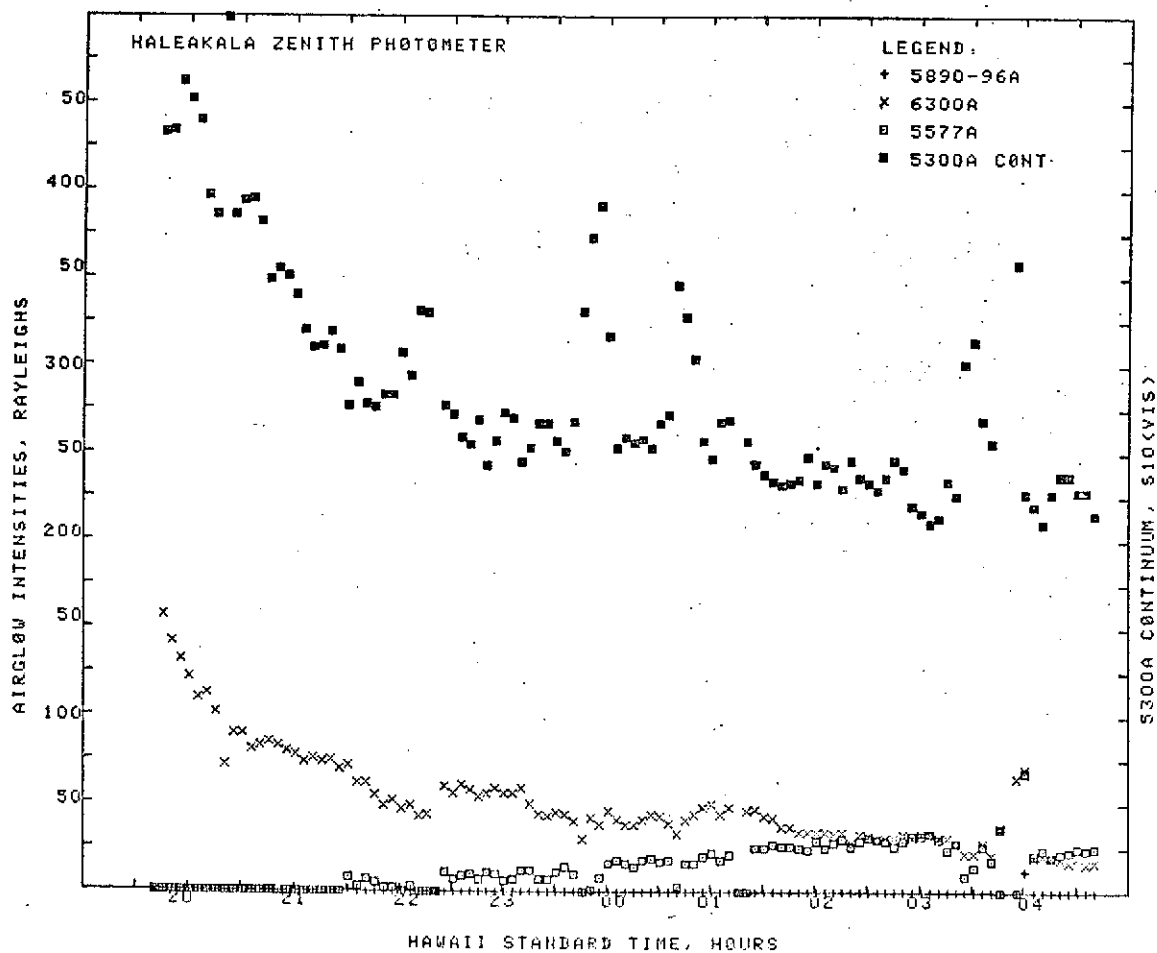
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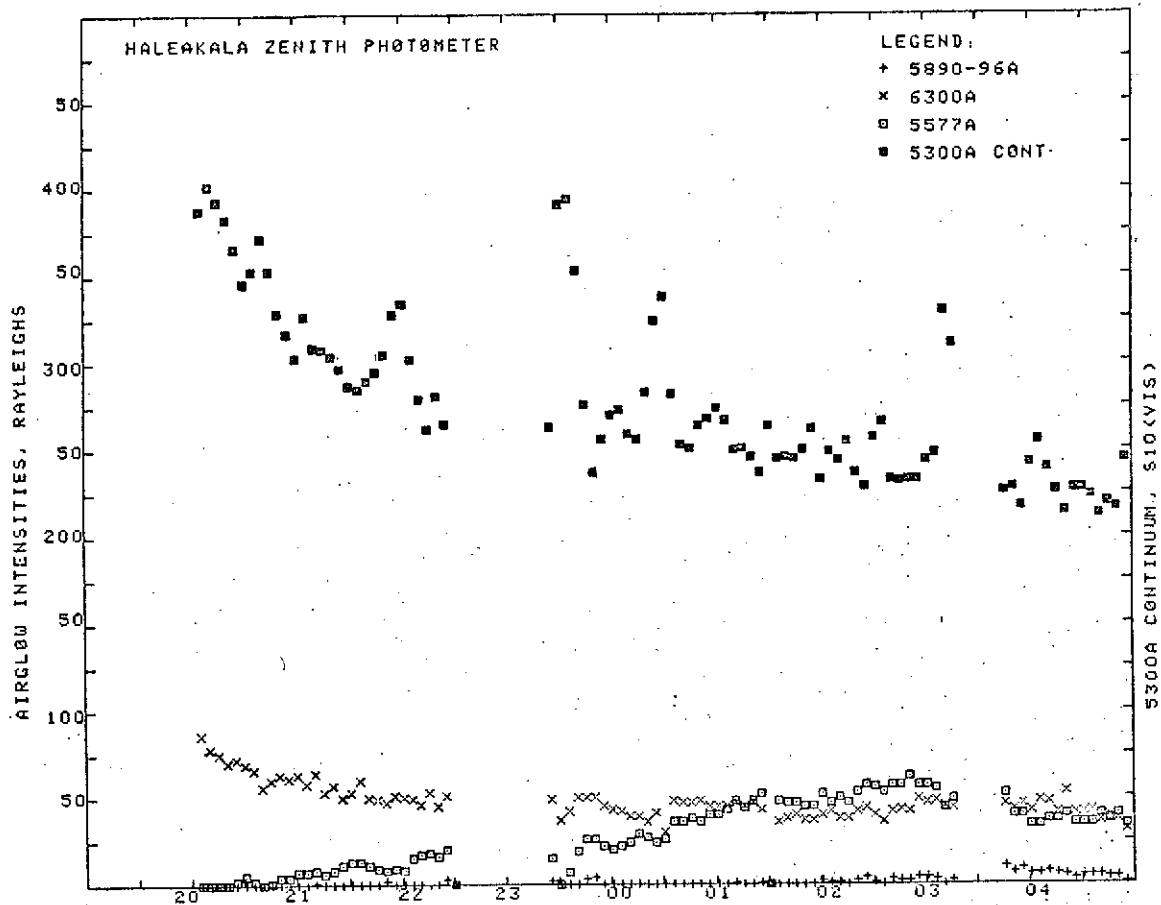
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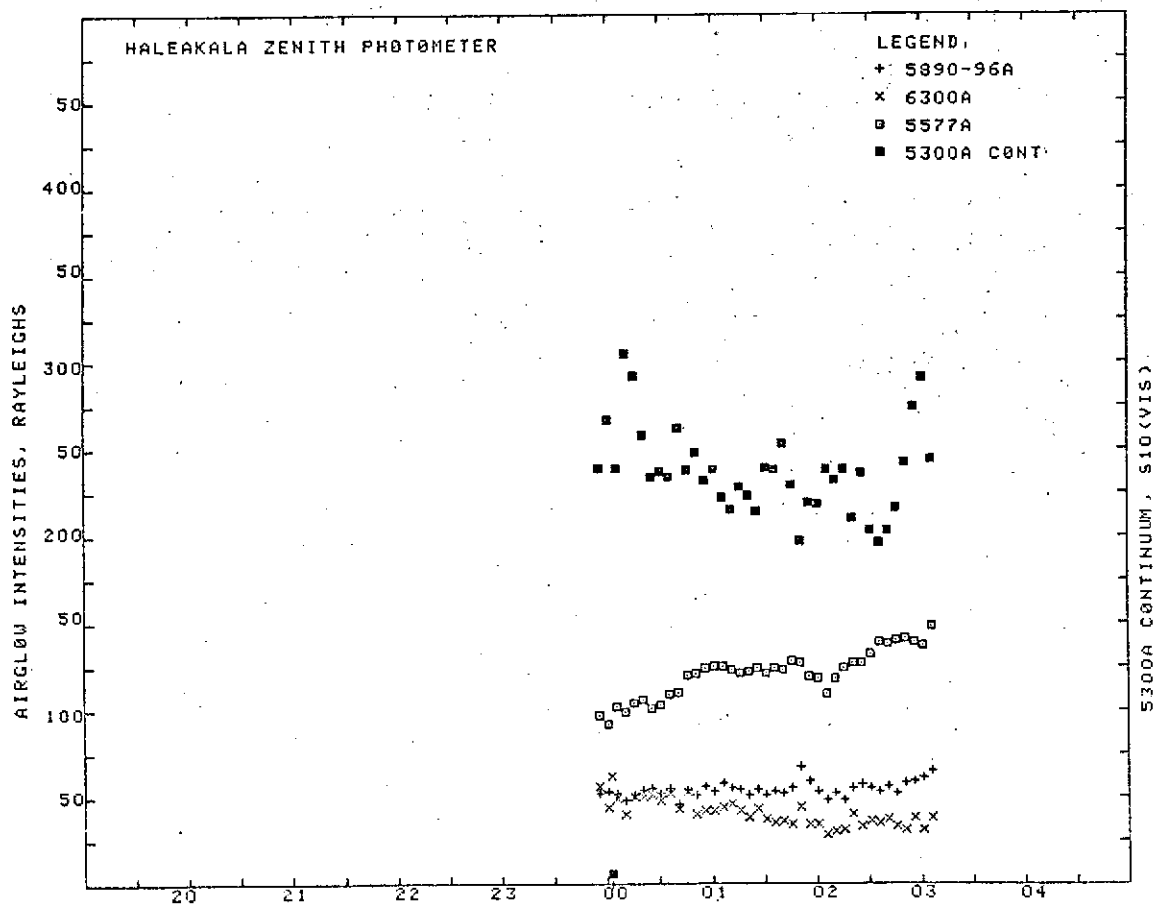
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DATE  
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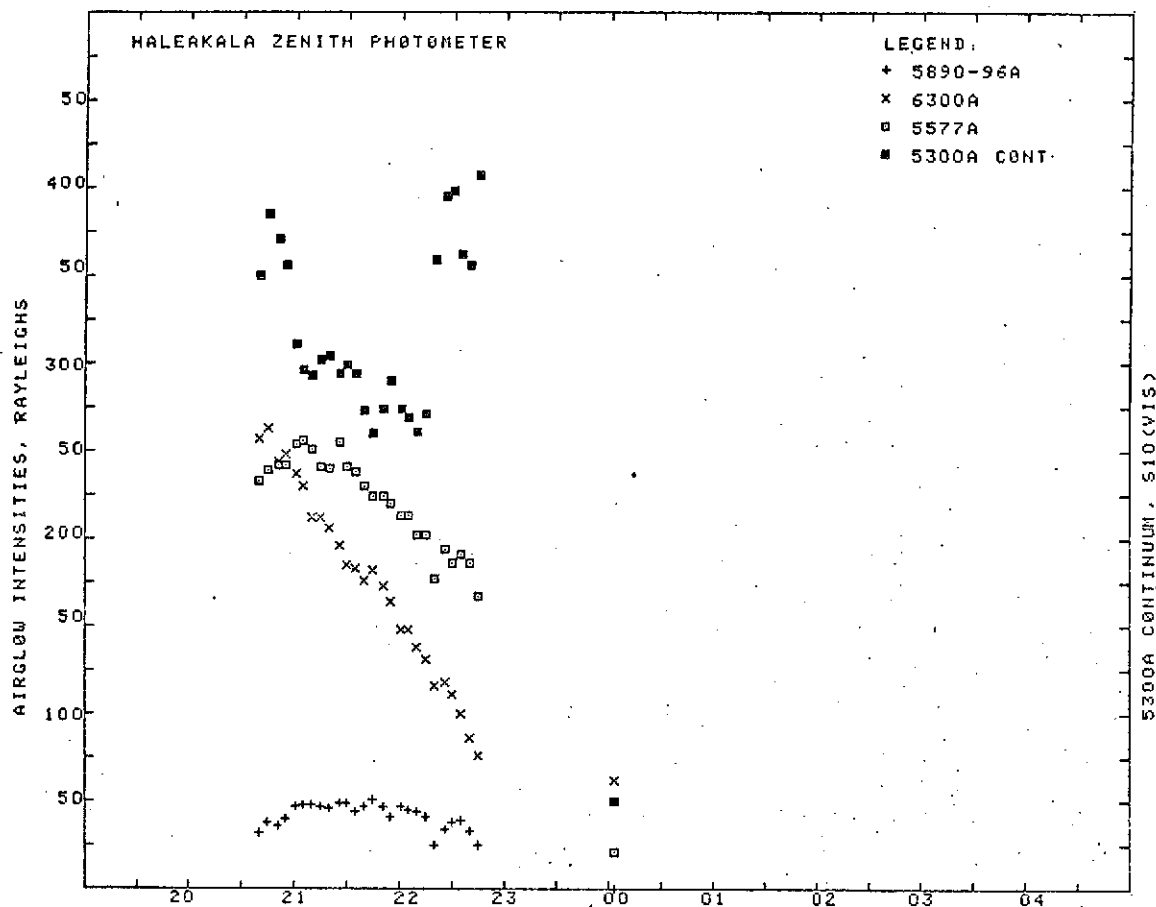
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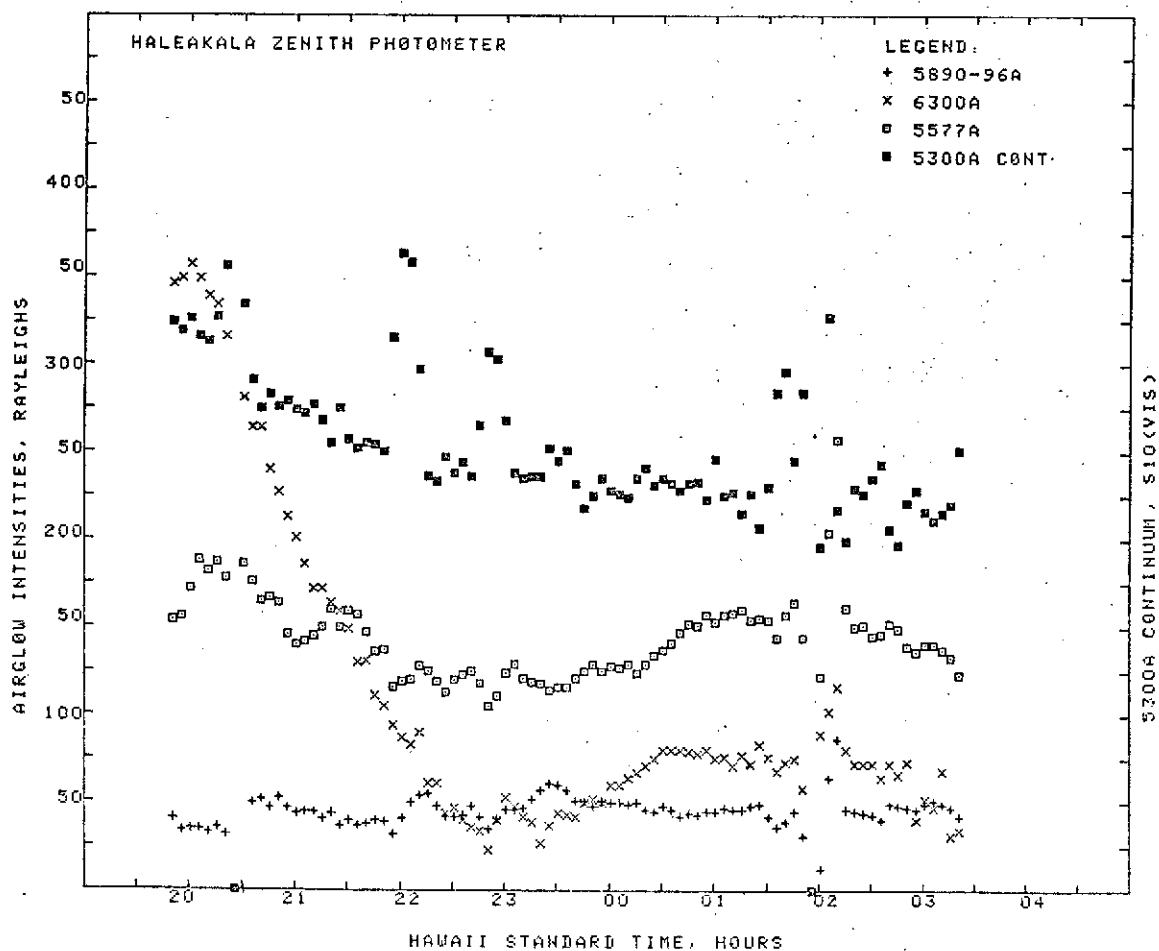
HAWAII STANDARD TIME, HOURS



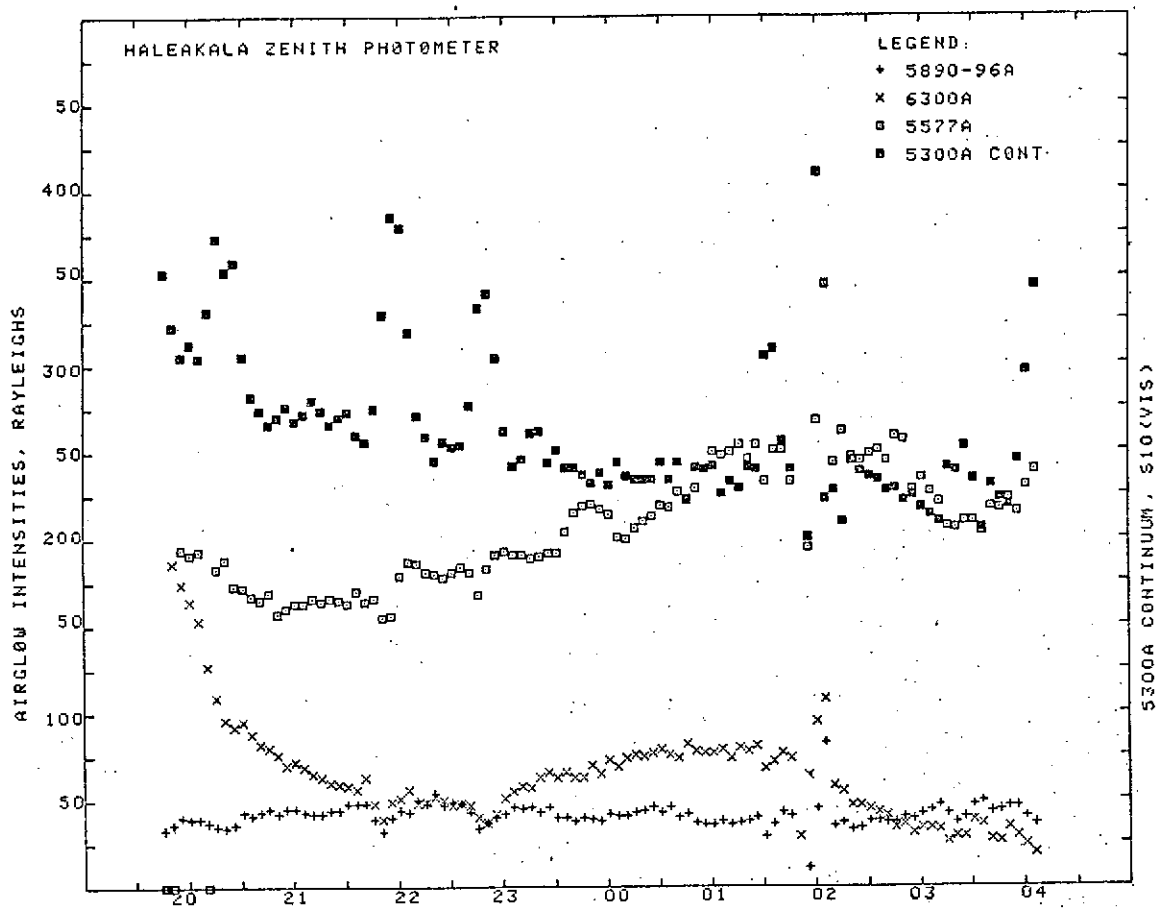
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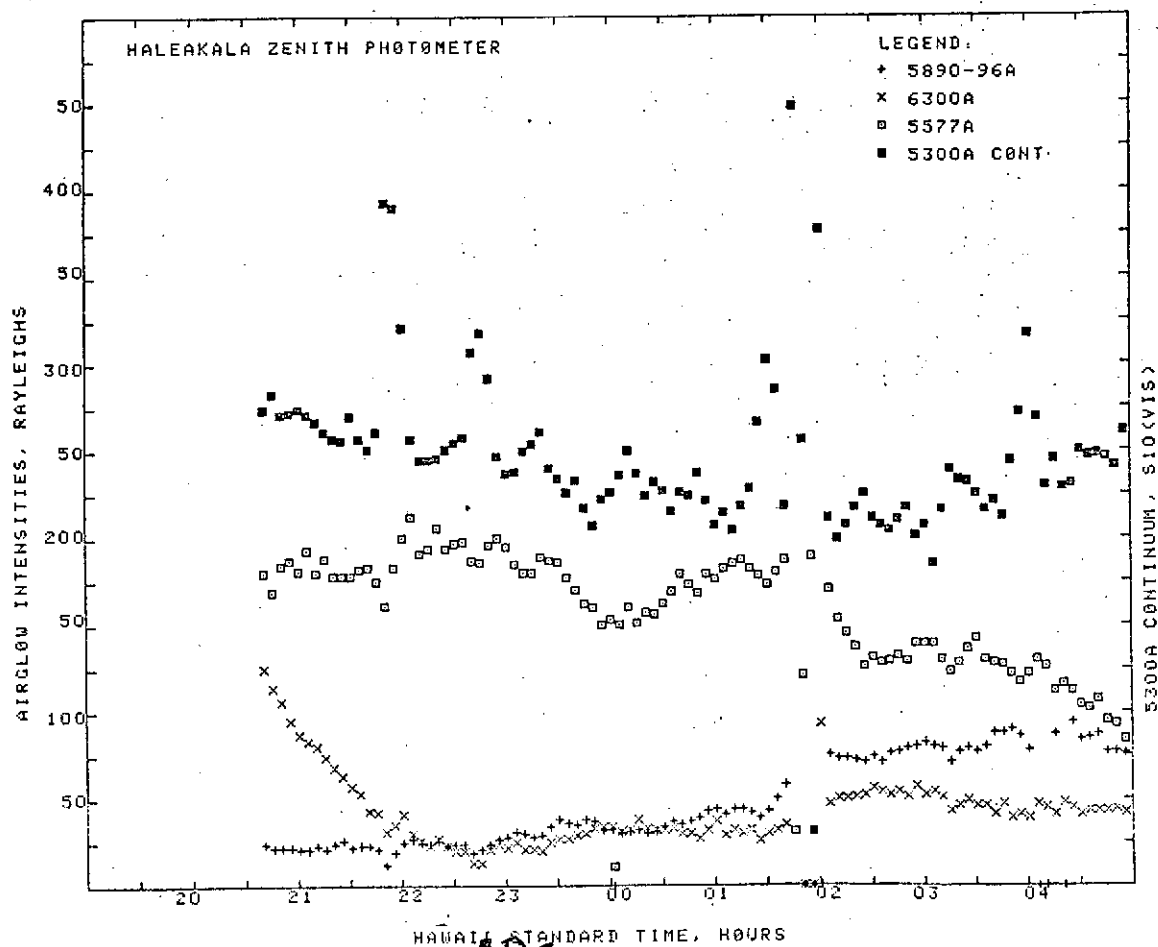
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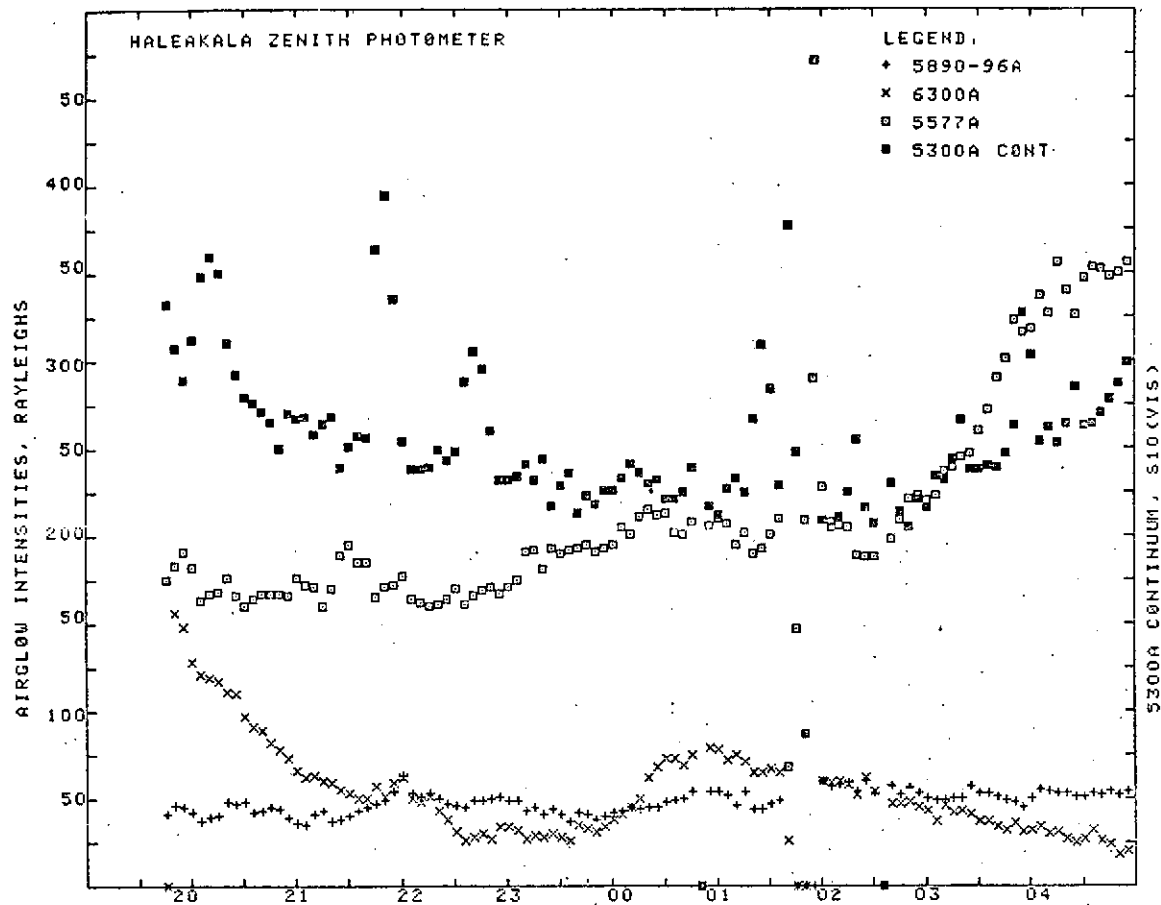
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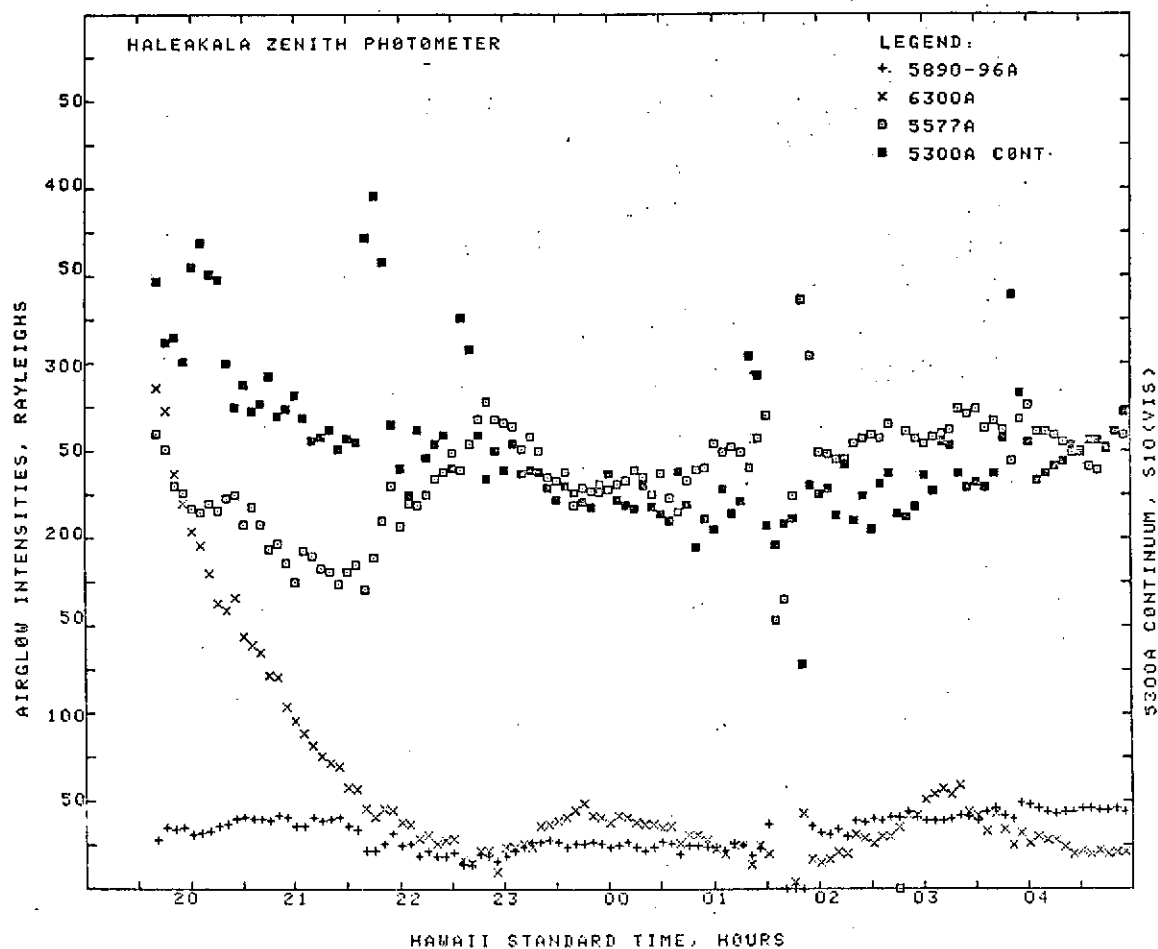
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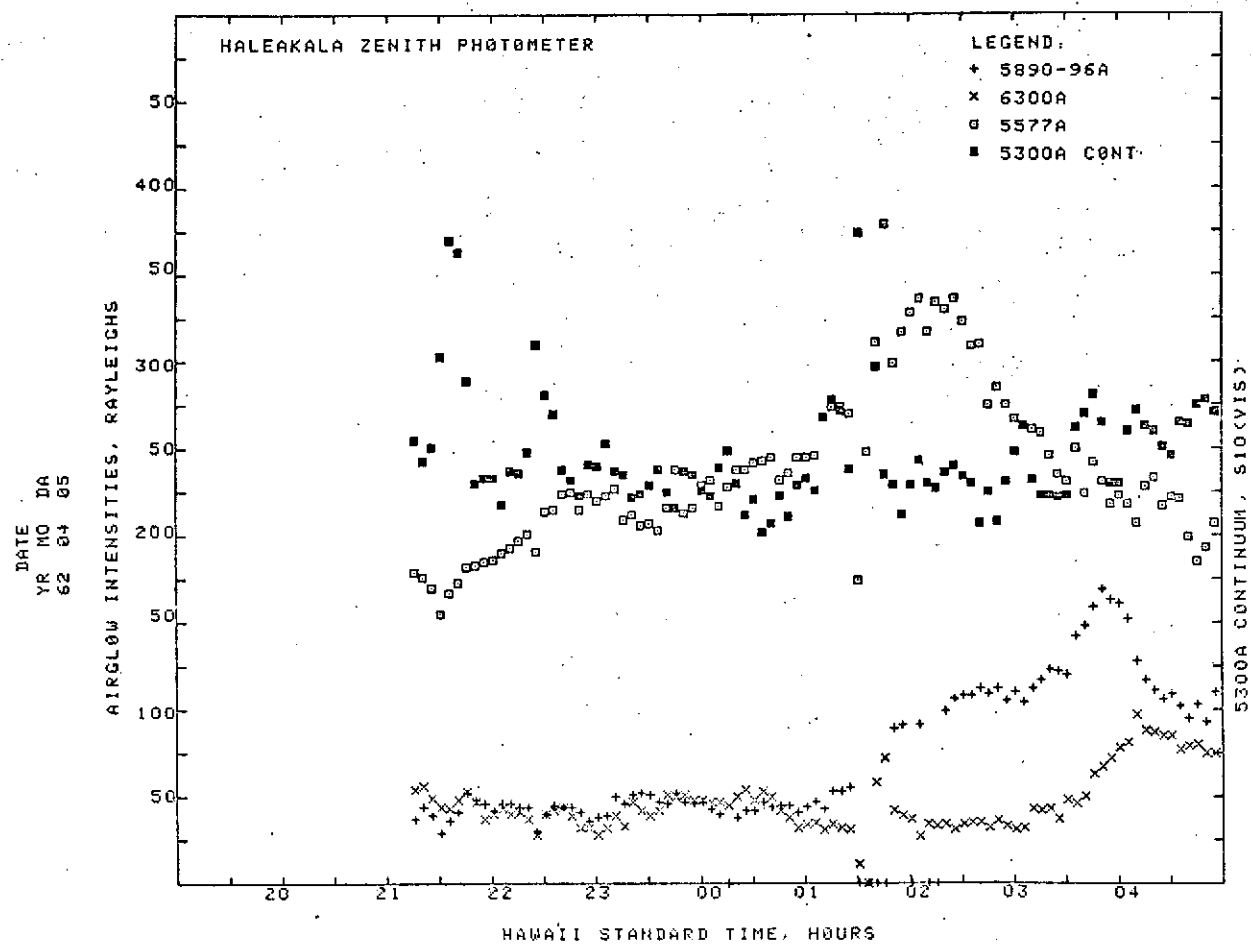
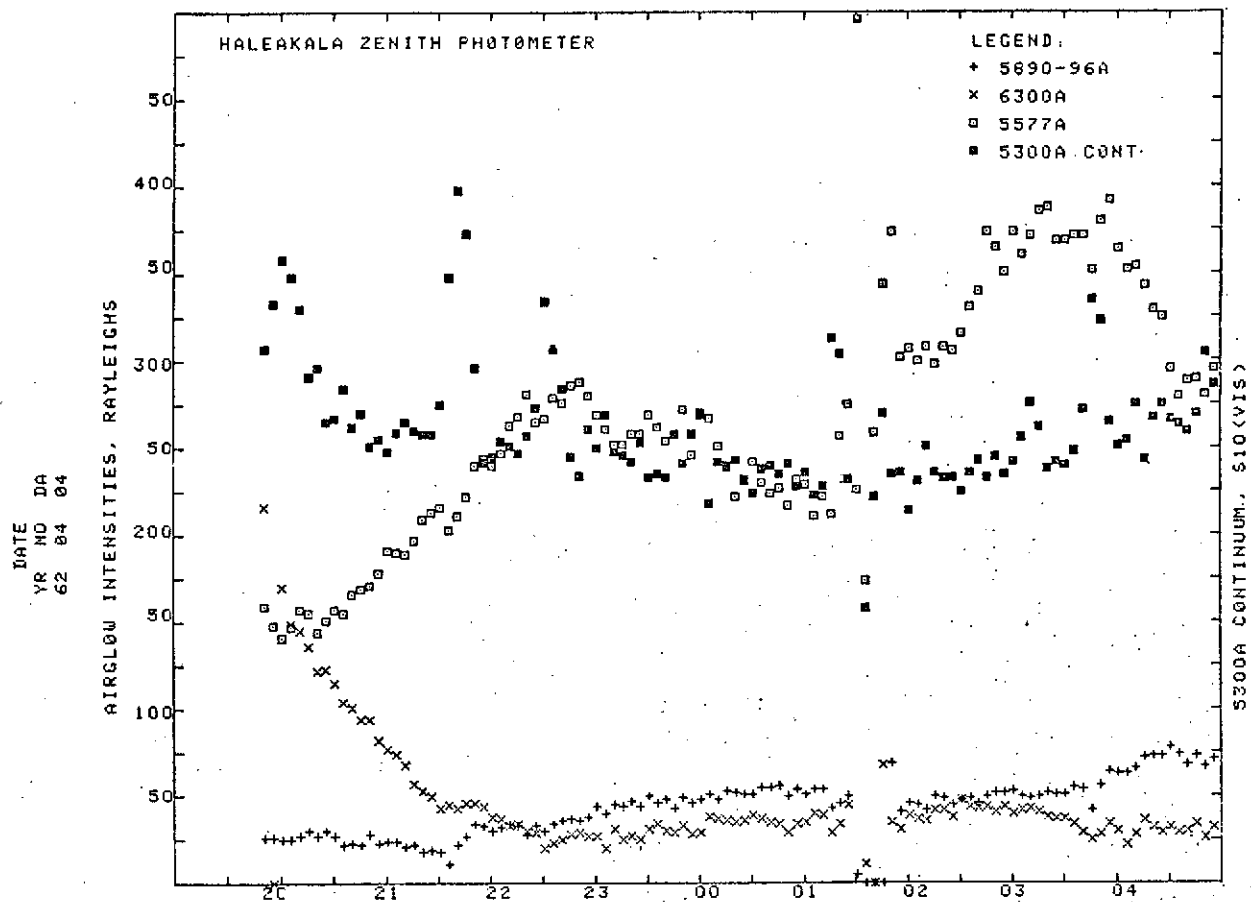


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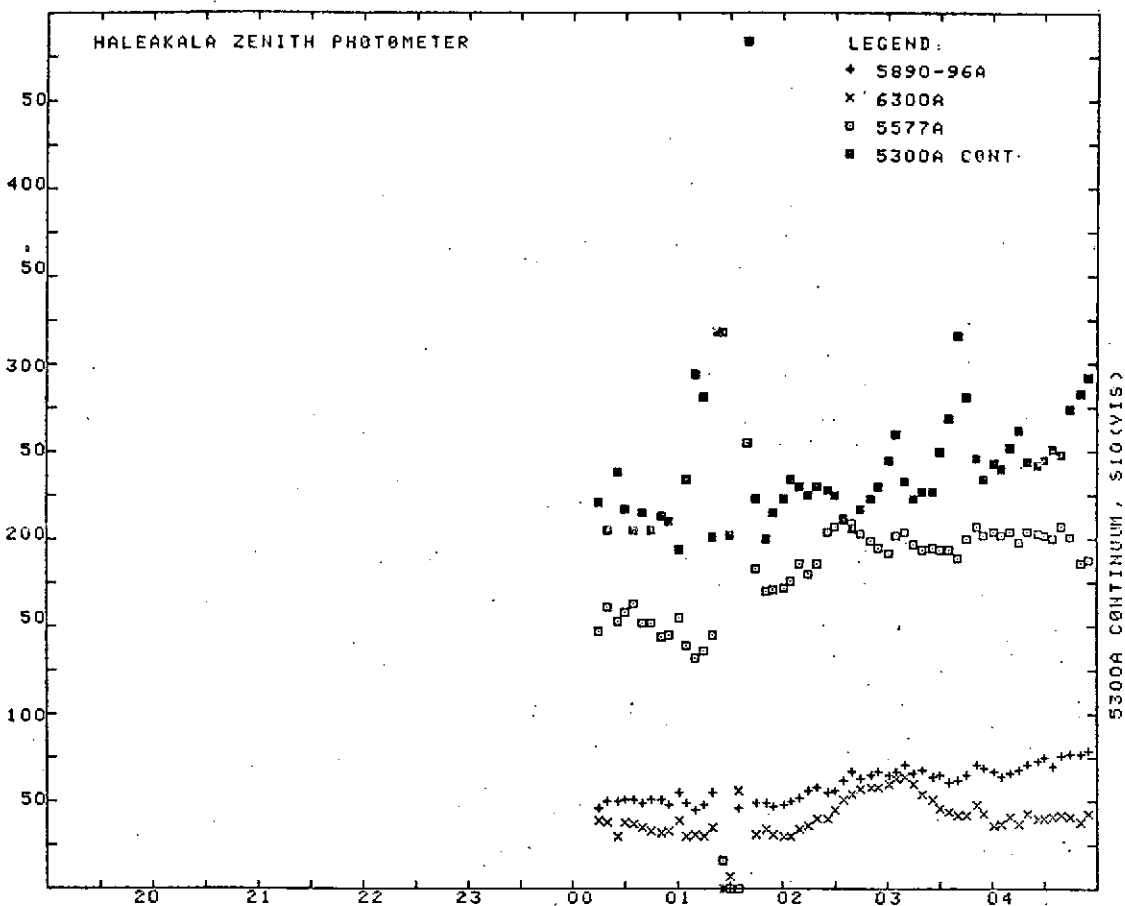
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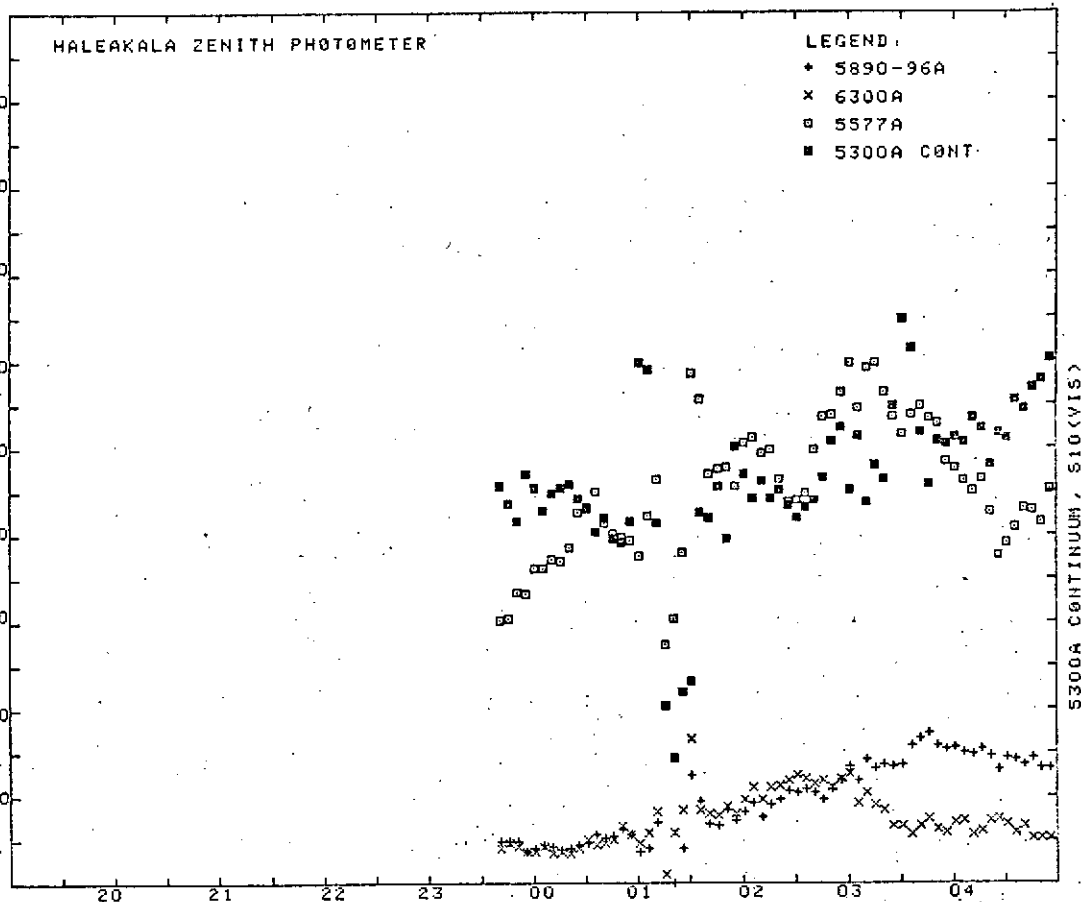
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AIRGLOW INTENSITIES, RAYLEIGHs



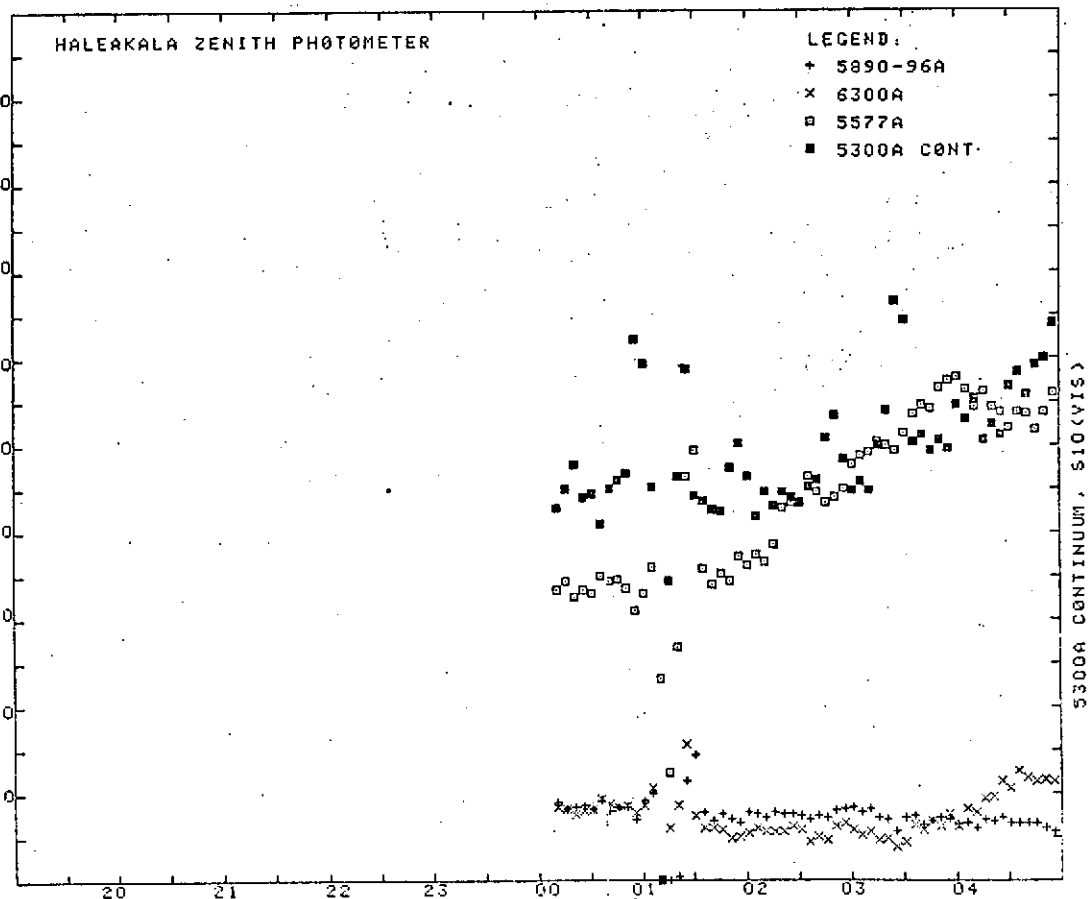
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AIRGLOW INTENSITIES, RAYLEIGHS

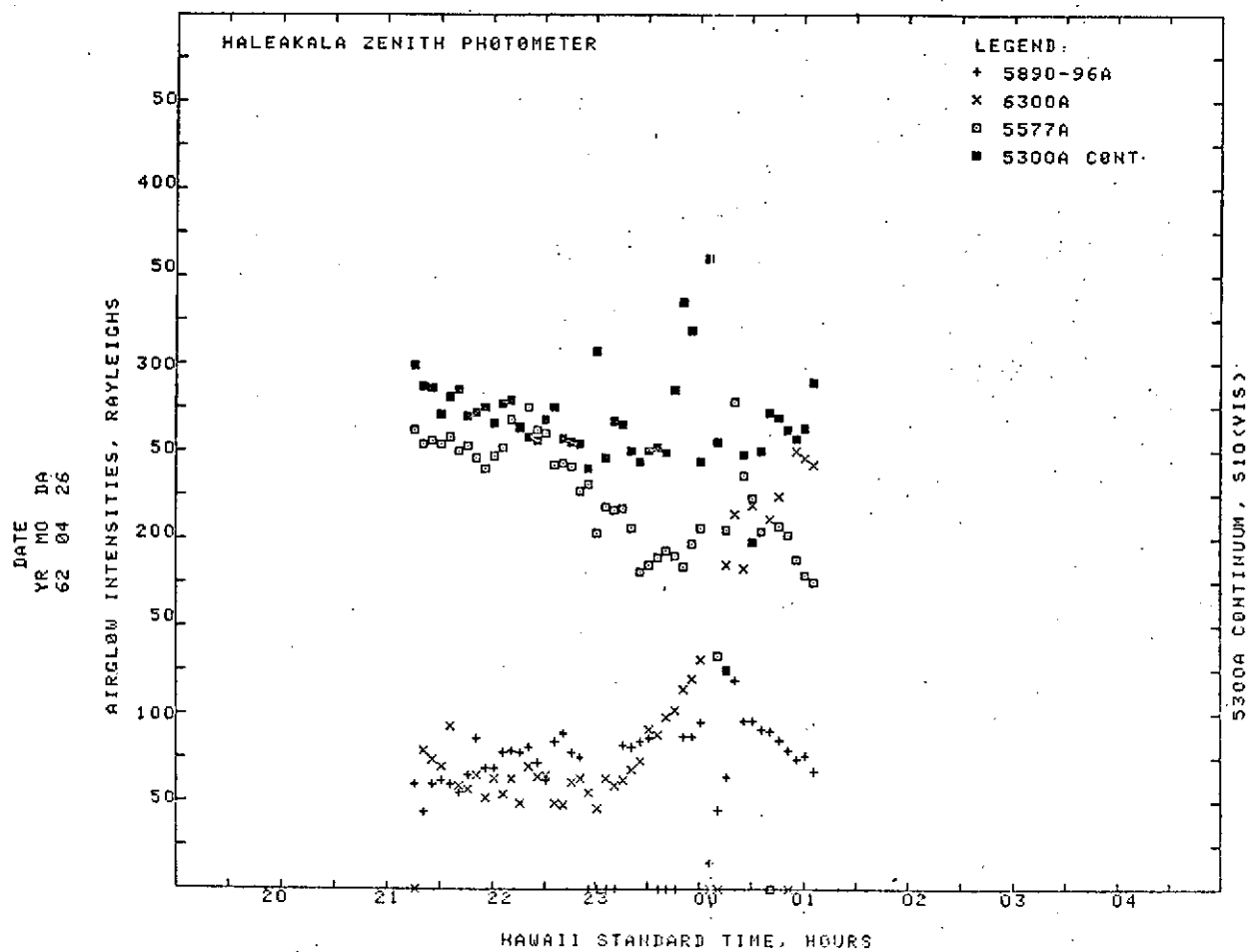
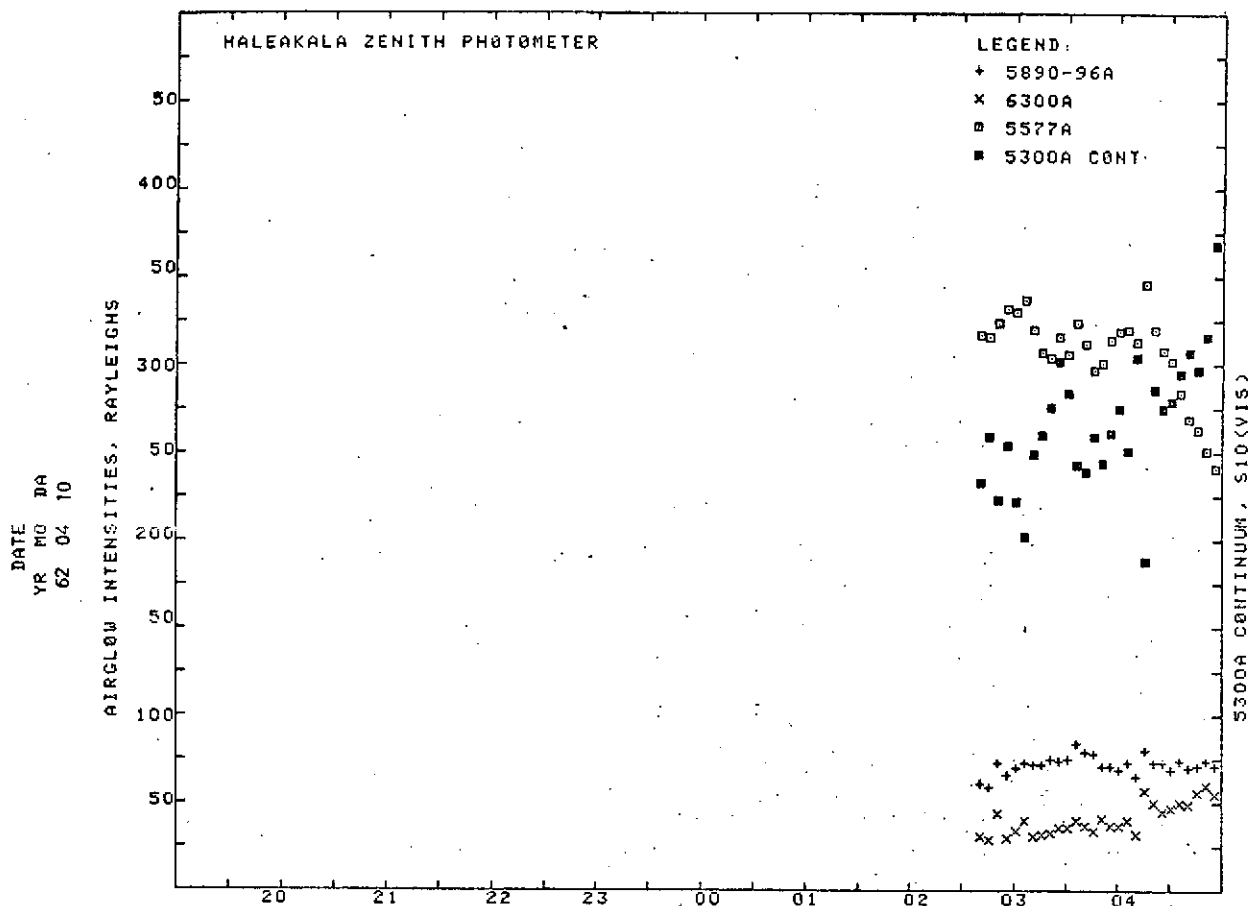


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AIRGLOW INTENSITIES, RAYLEIGHS

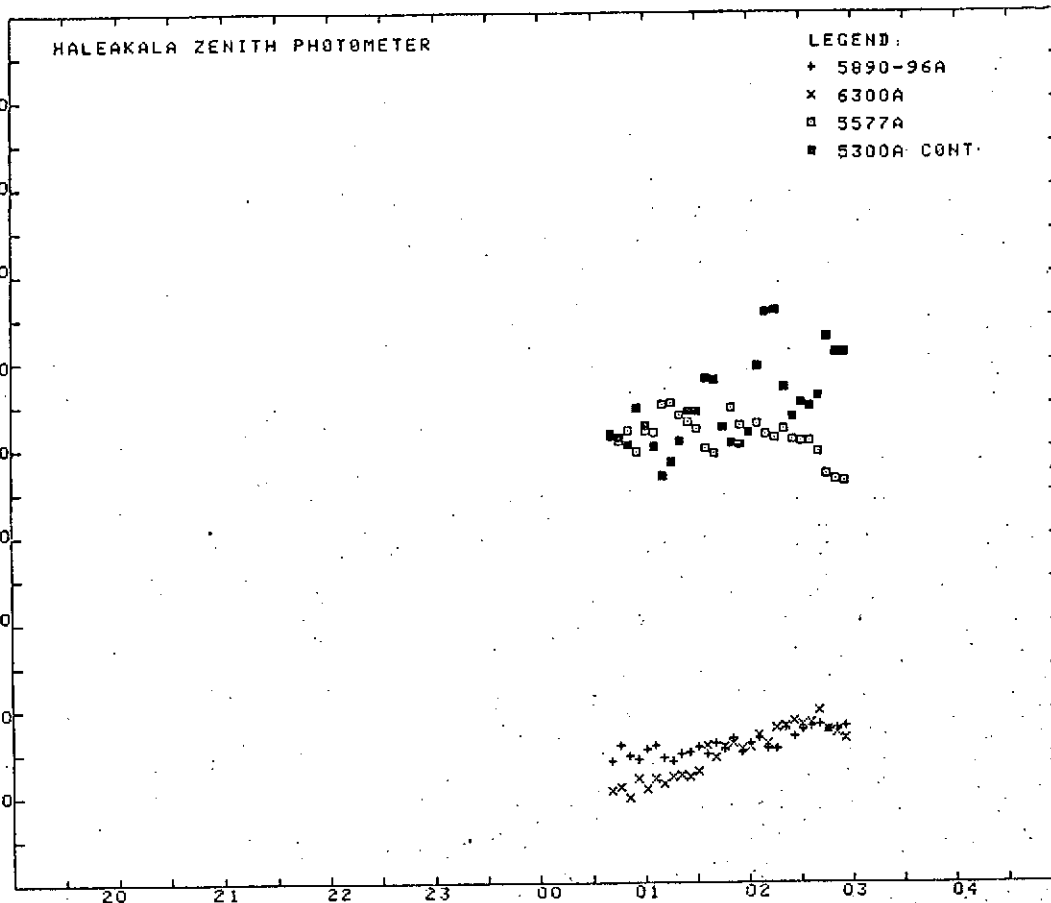


HAWAII STANDARD TIME, HOURS



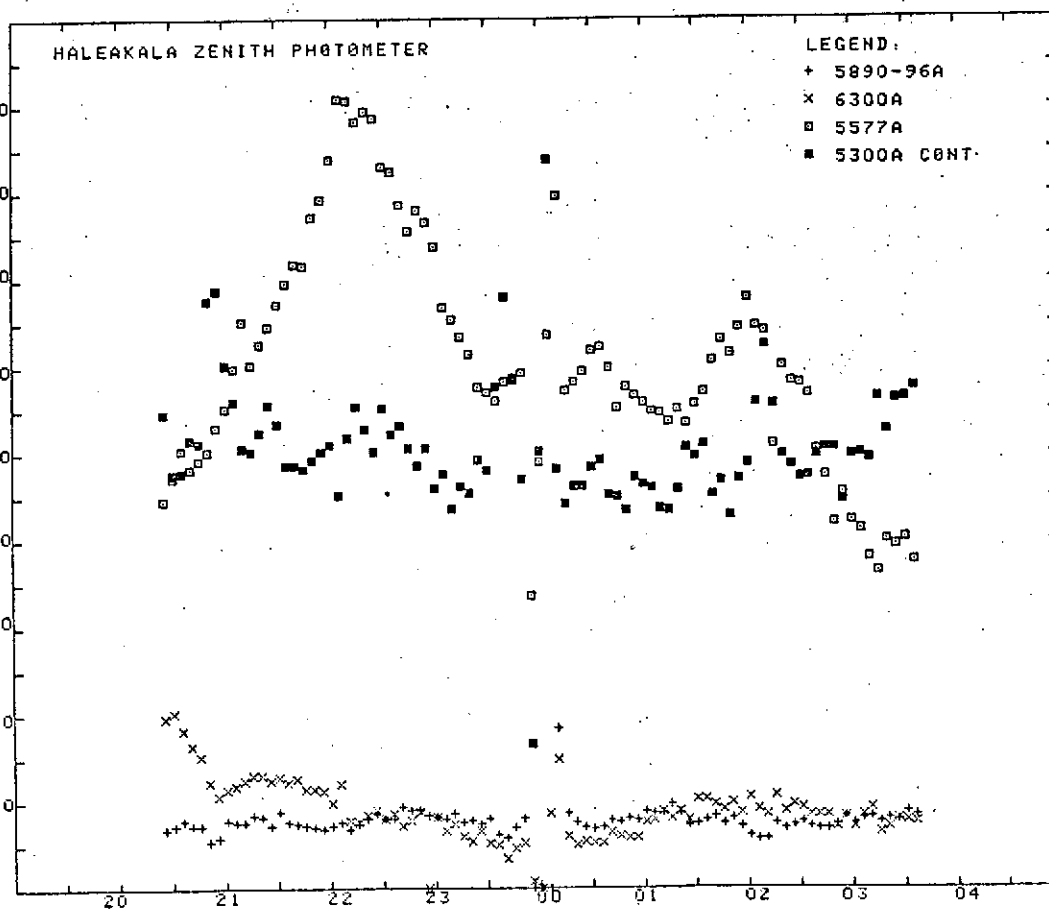
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AIRGLOW INTENSITIES, RAYLEIGHS



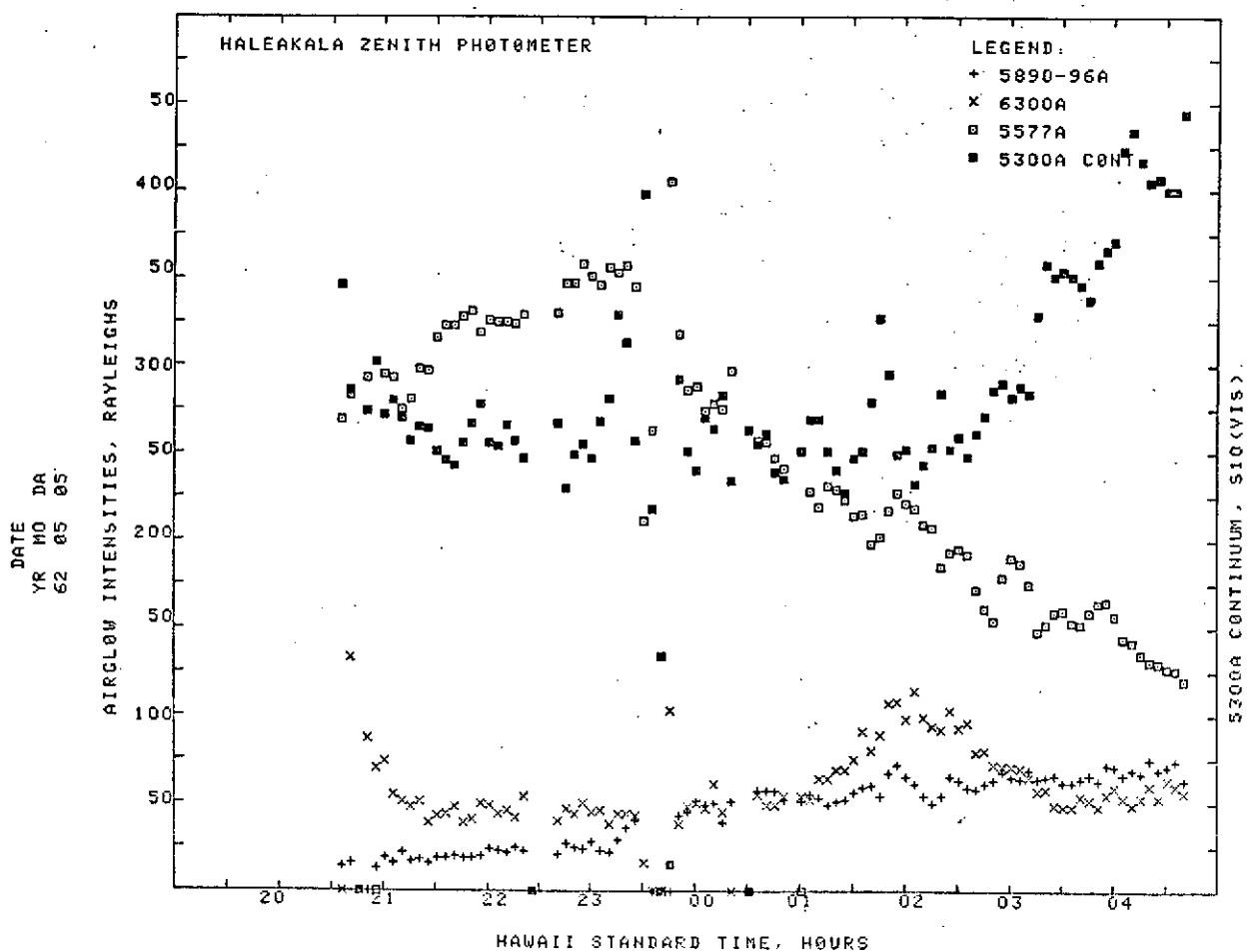
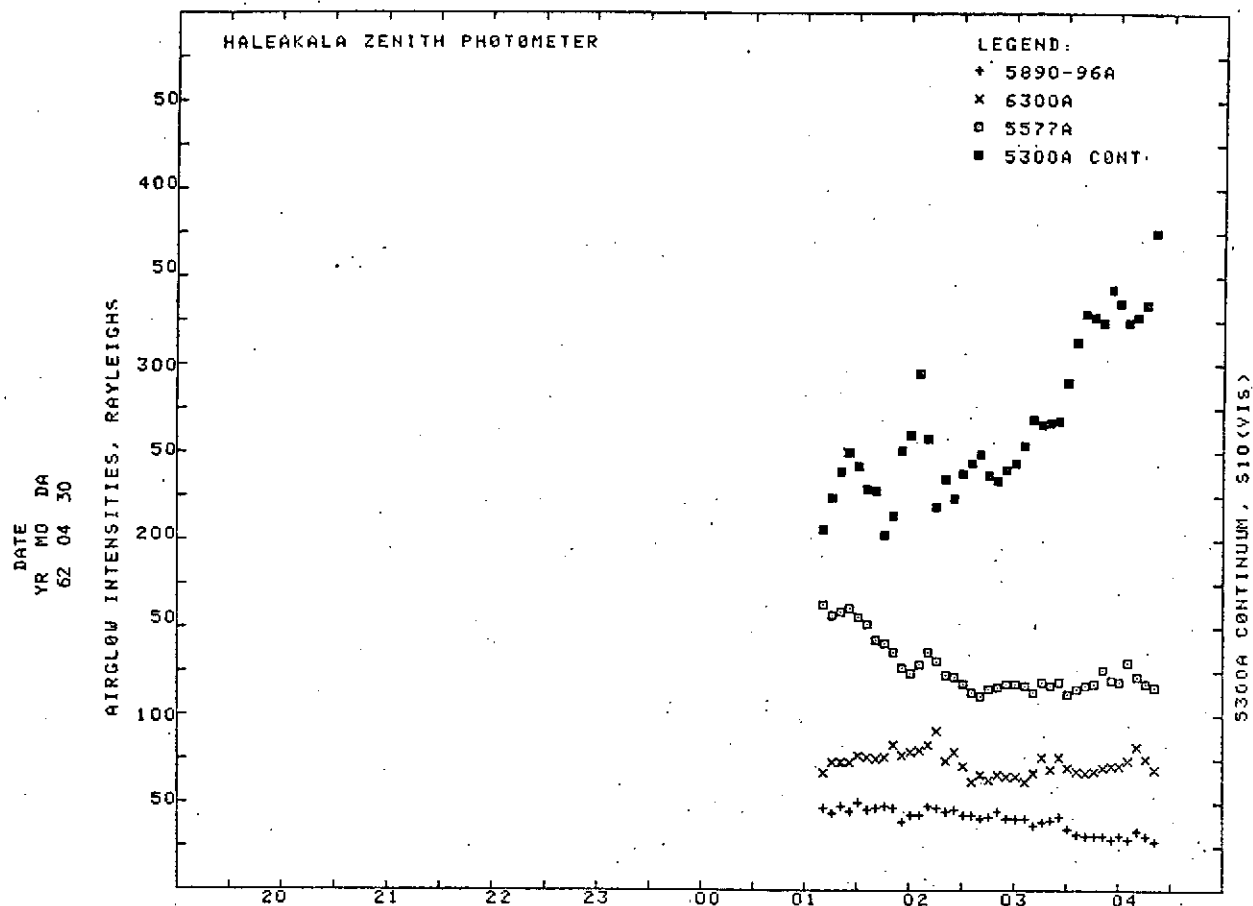
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AIRGLOW INTENSITIES, RAYLEIGHS



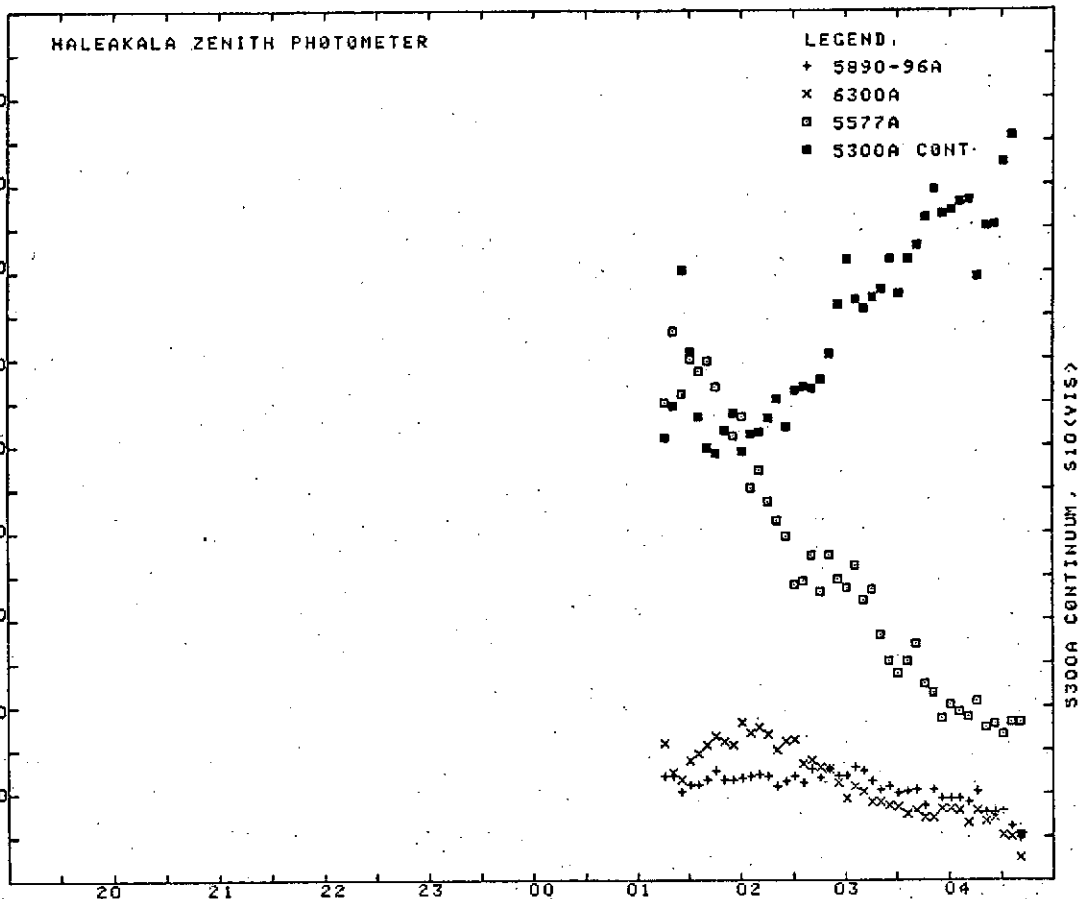
HAWAII STANDARD TIME, HOURS





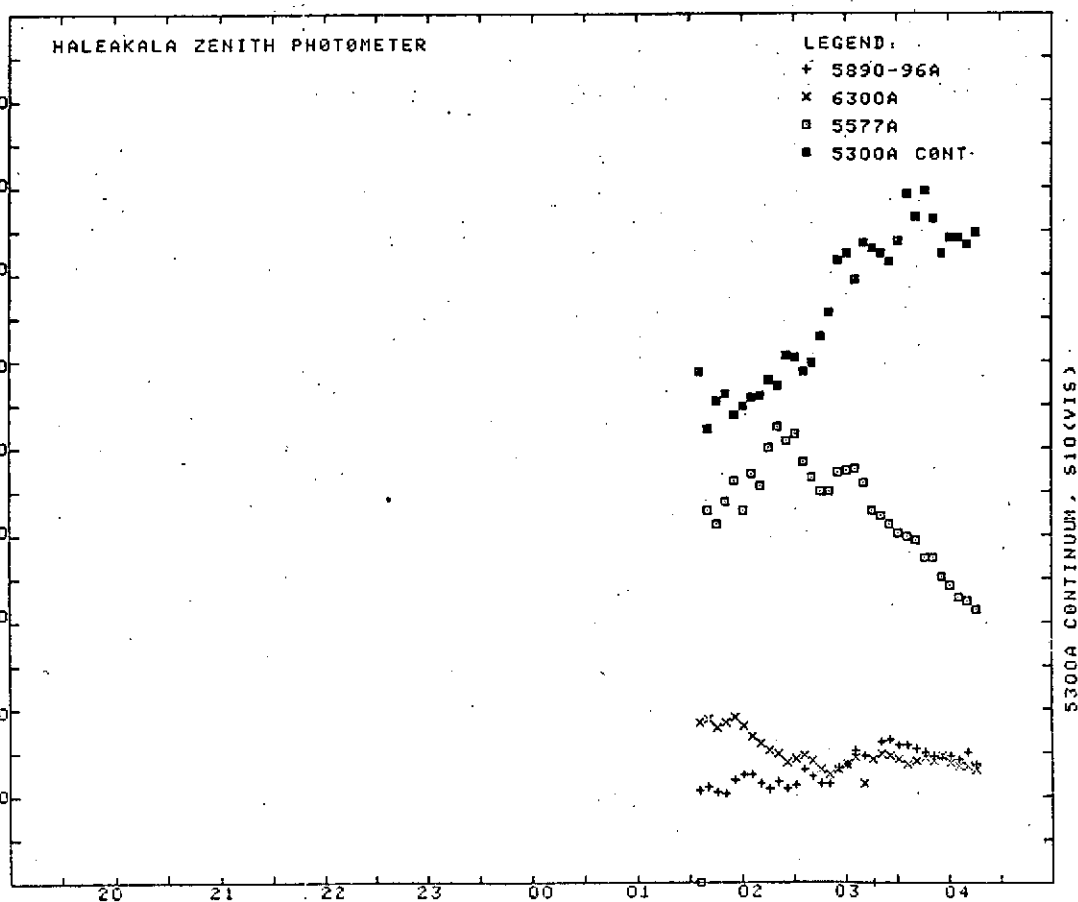
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AIRGLOW INTENSITIES, RAYLEIGHS



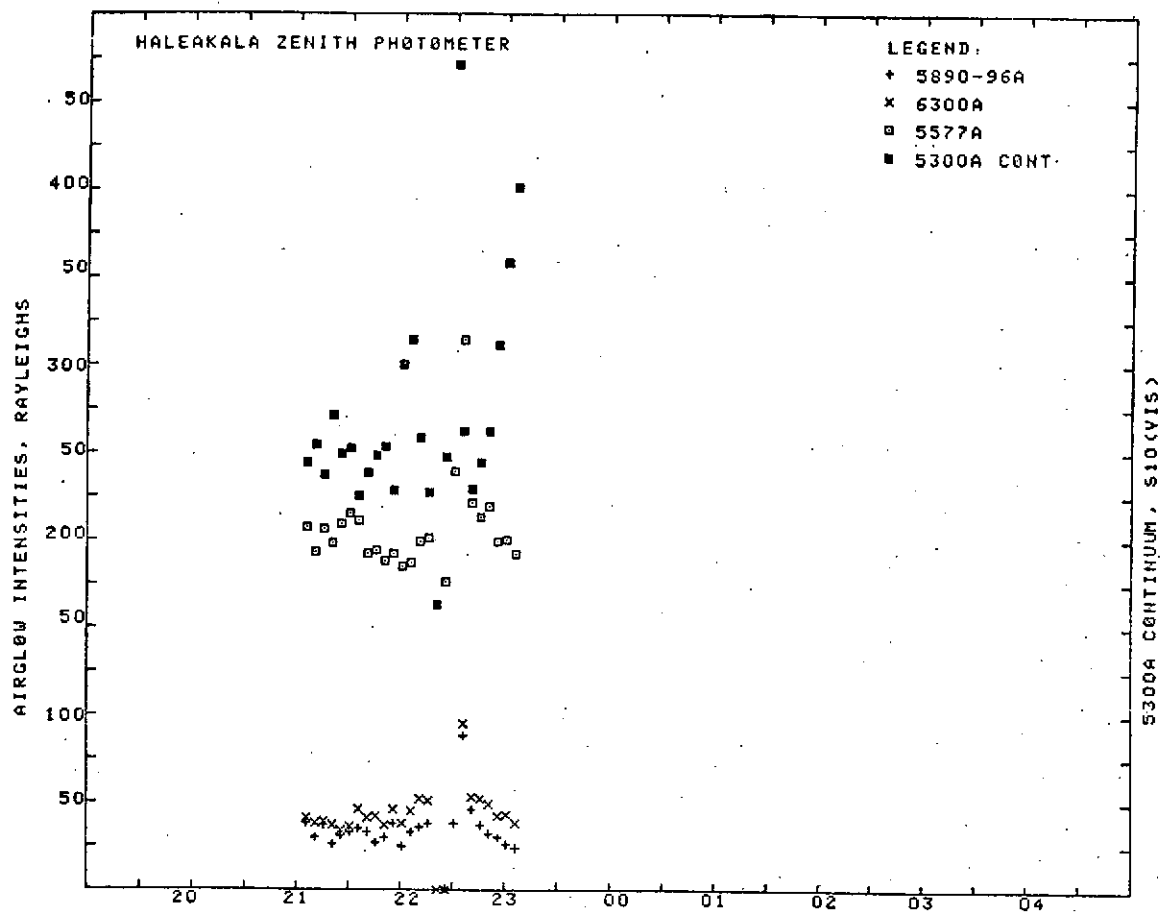
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AIRGLOW INTENSITIES, RAYLEIGHS

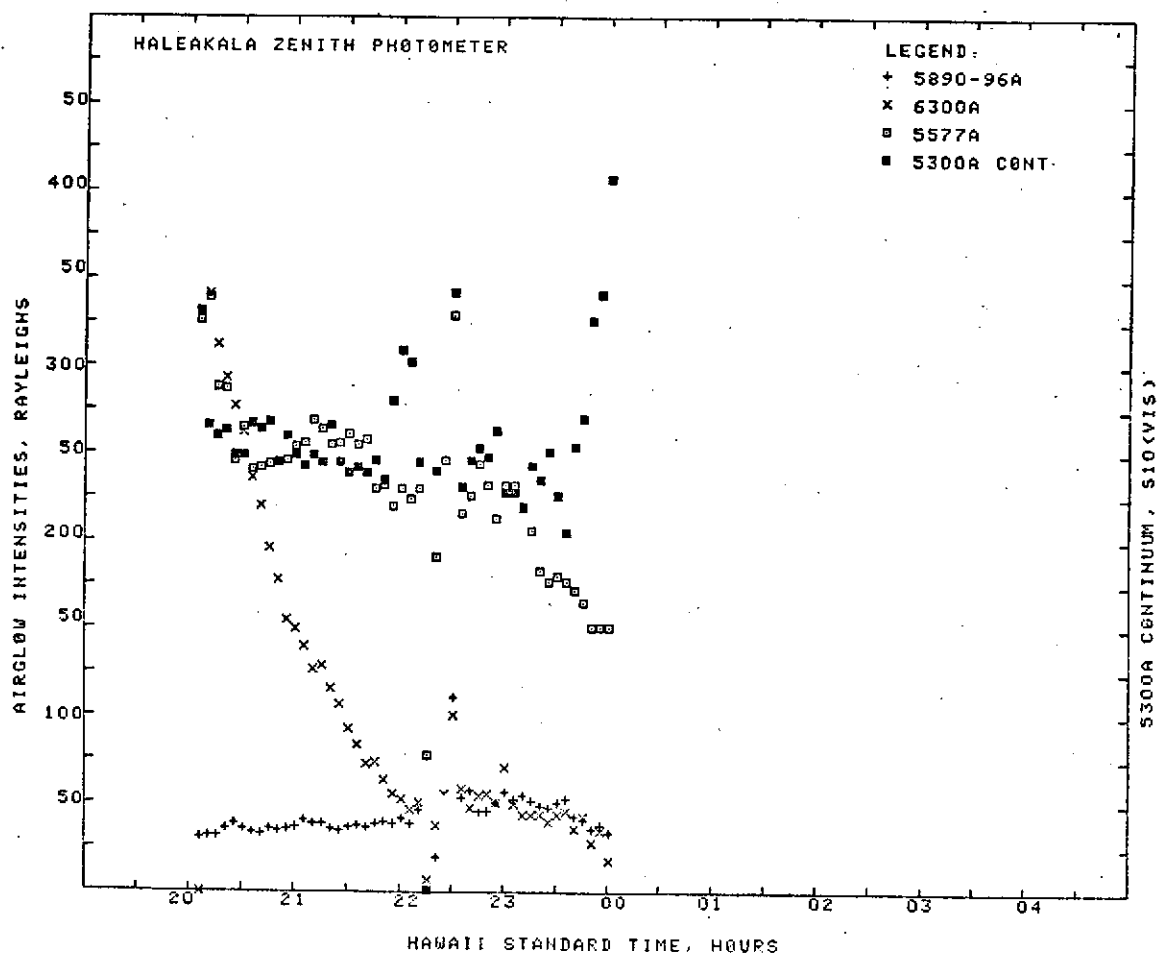


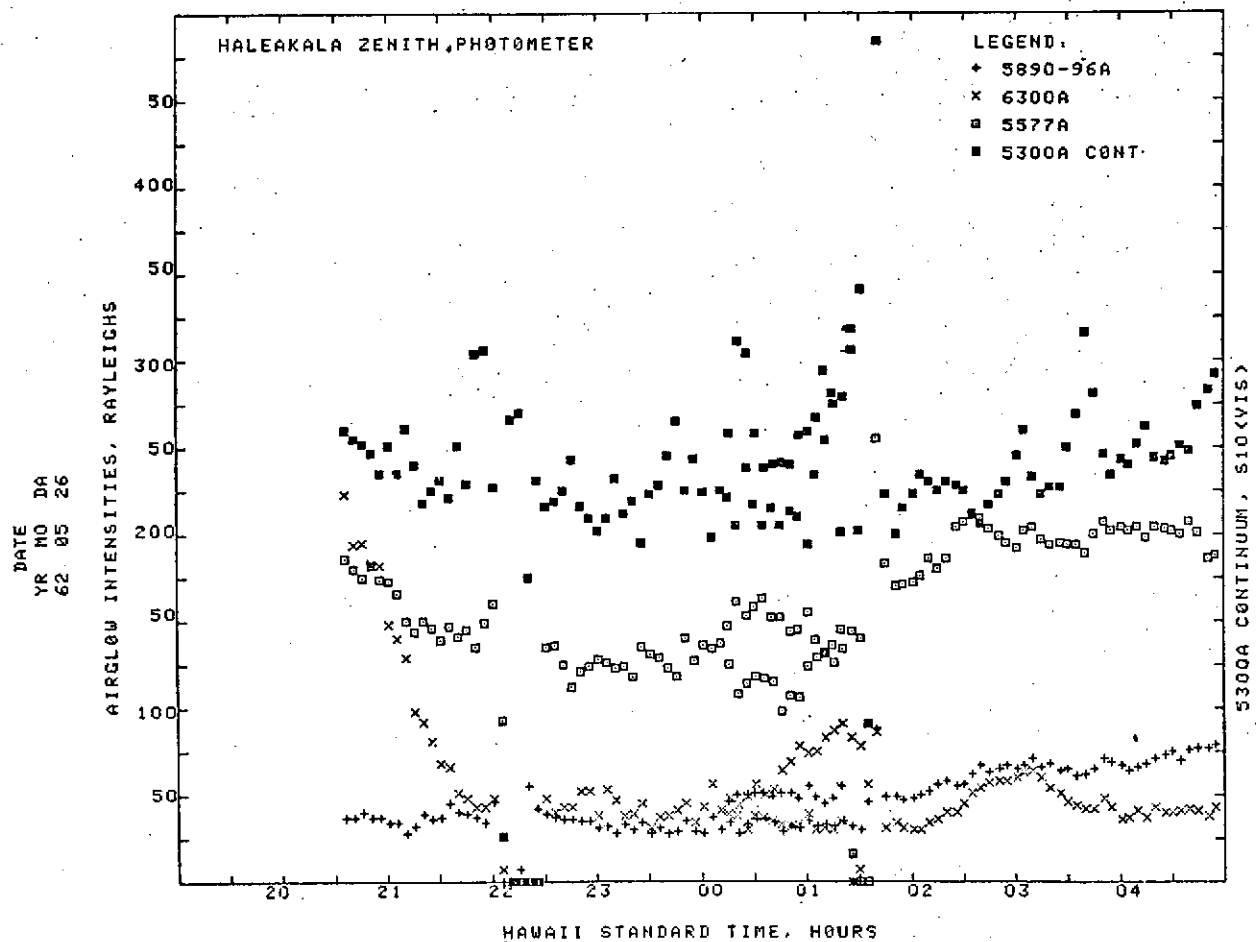
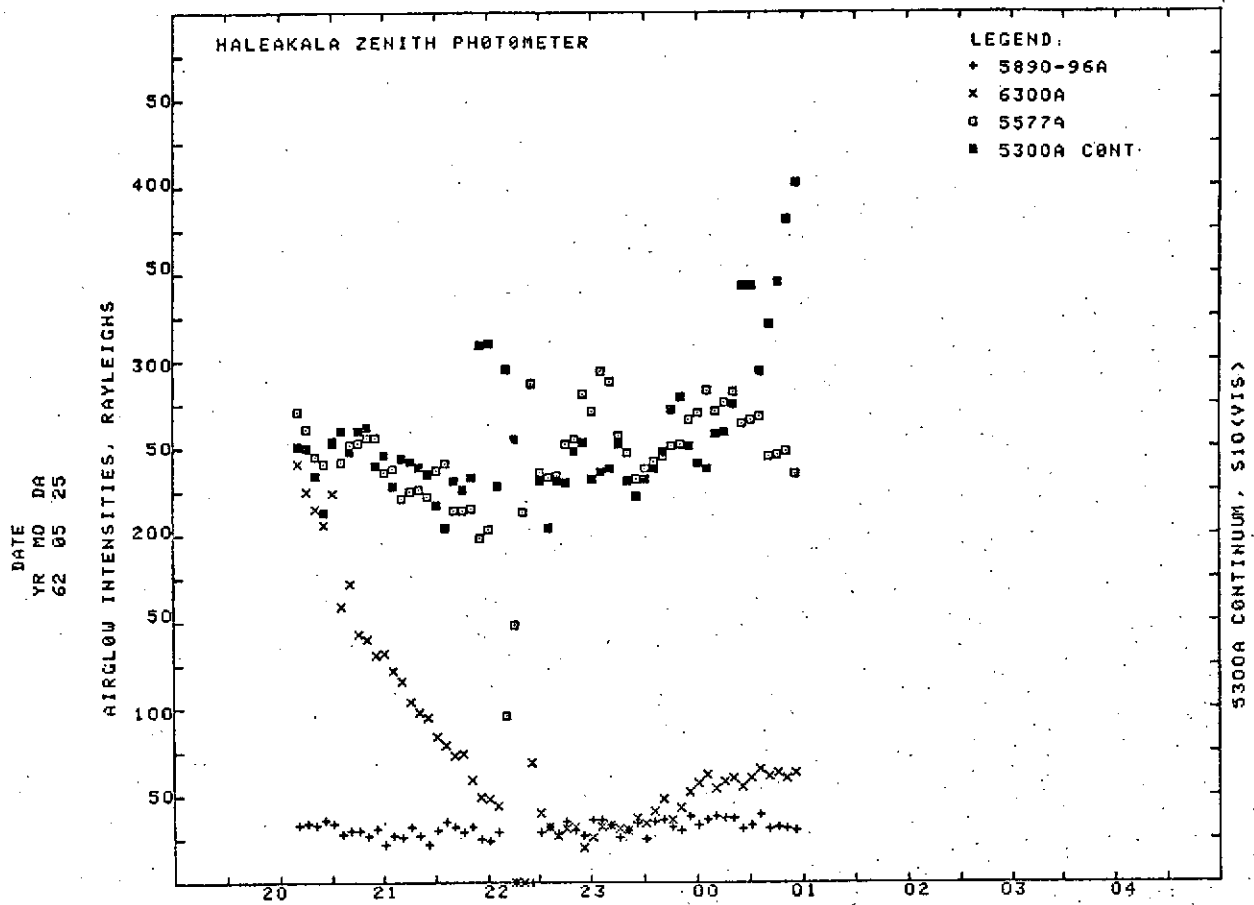
HAWAII STANDARD TIME, HOURS

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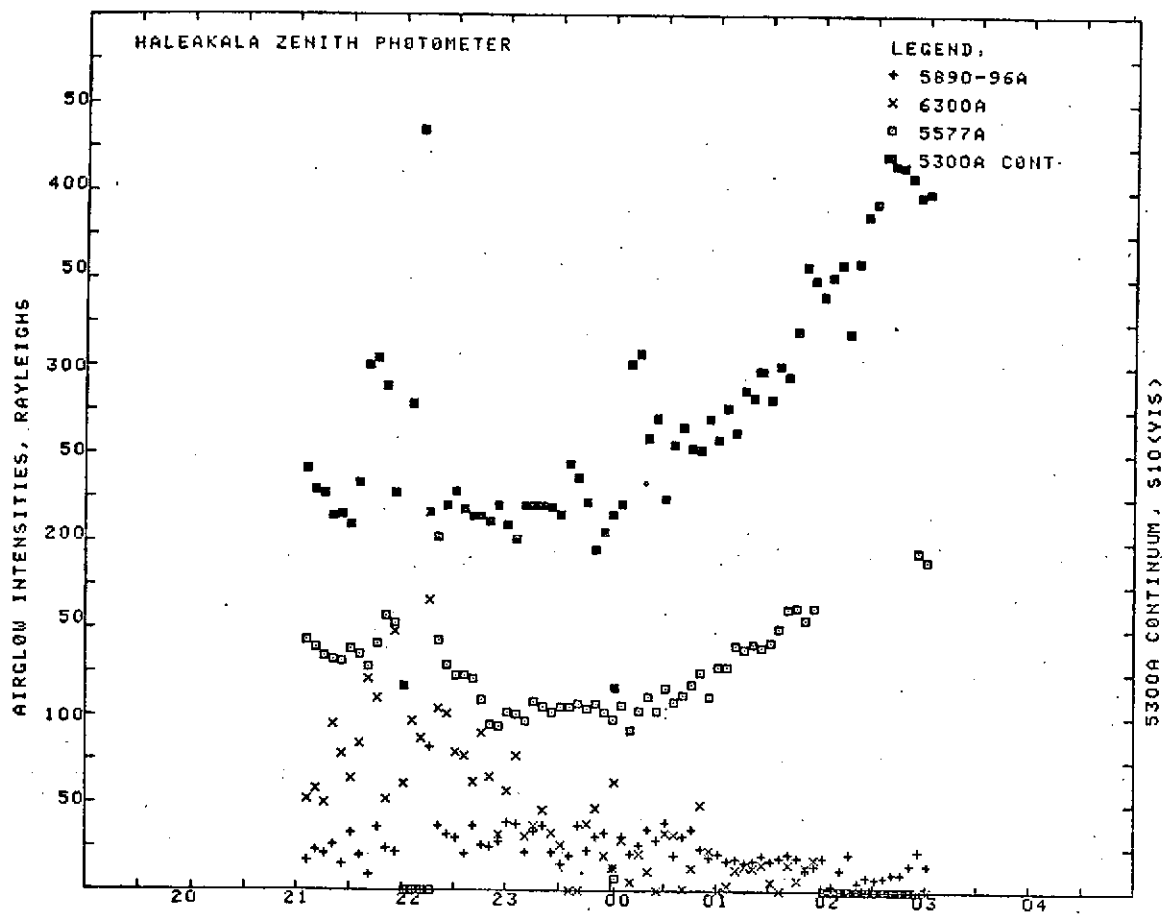


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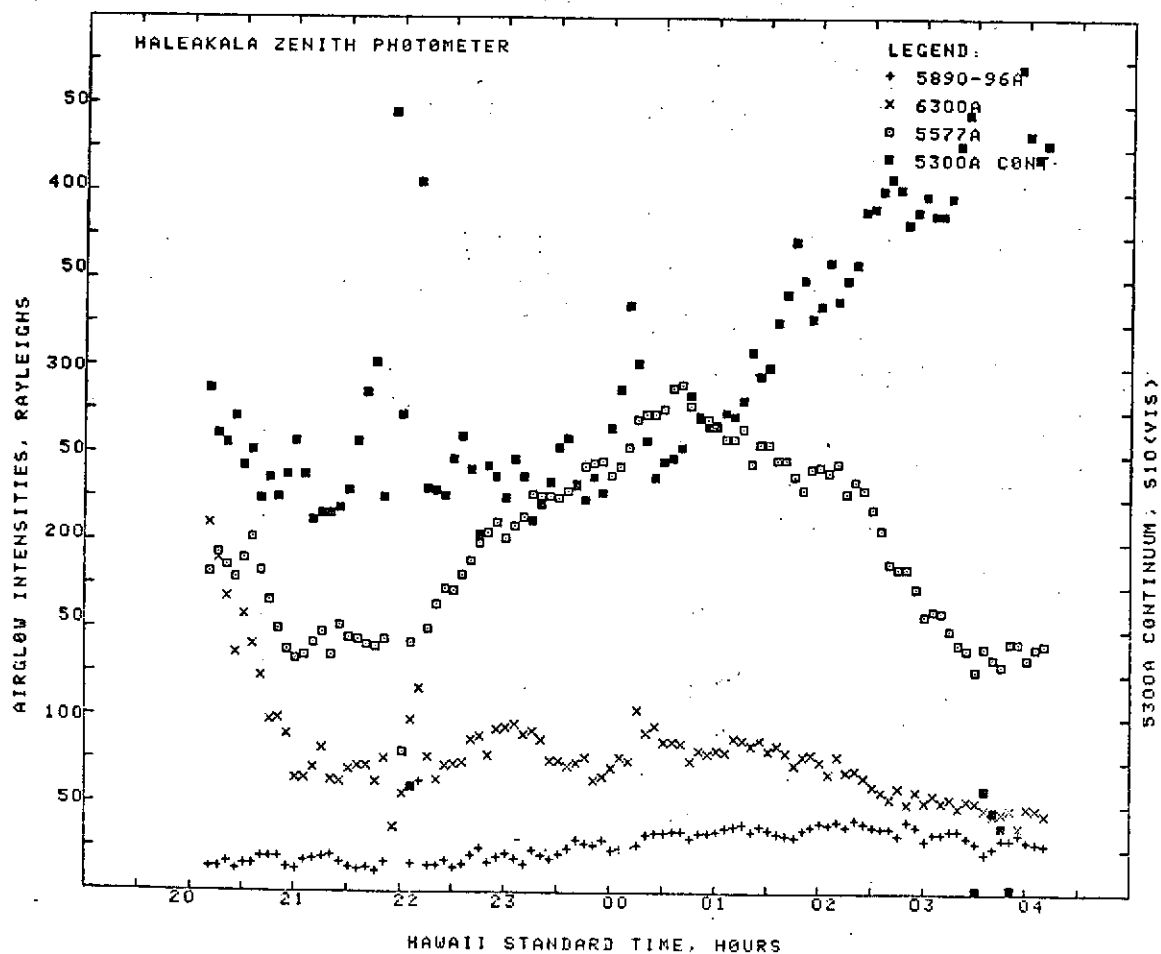




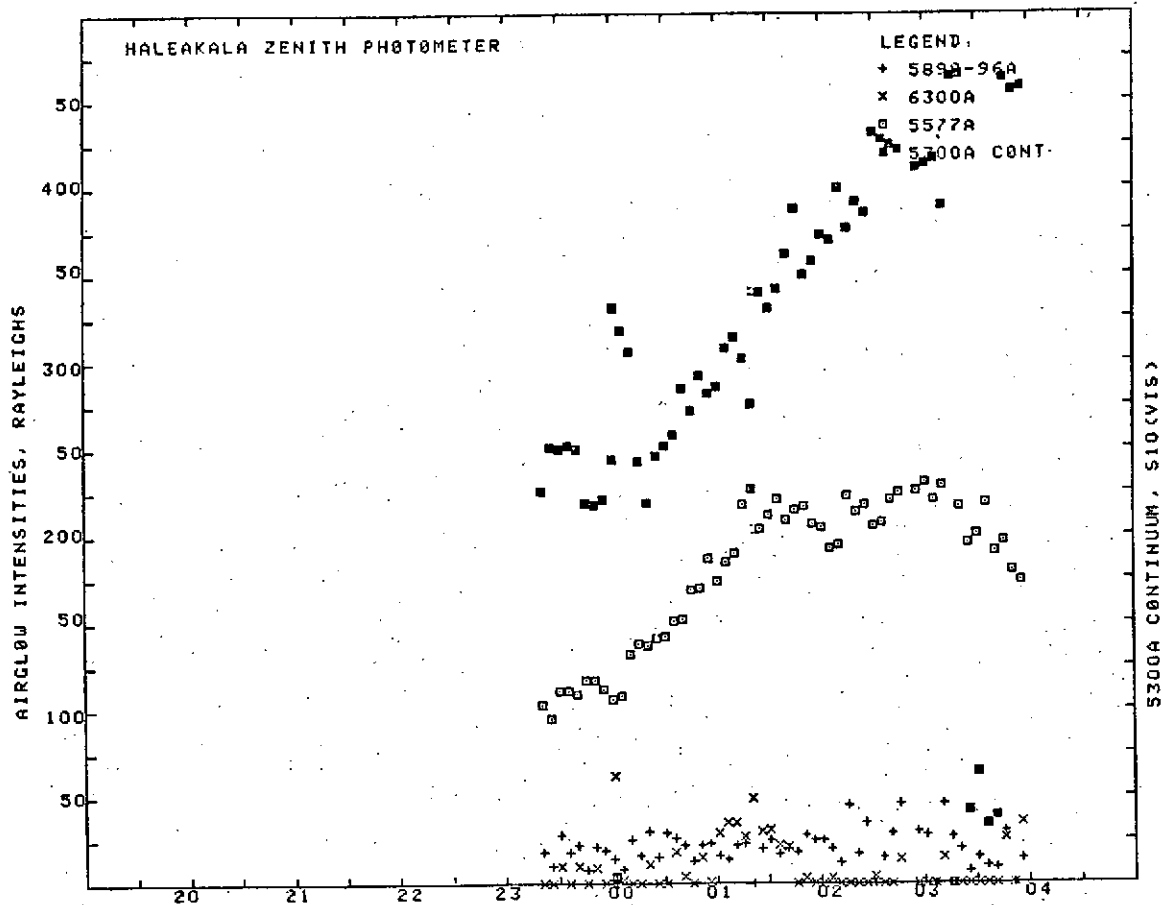
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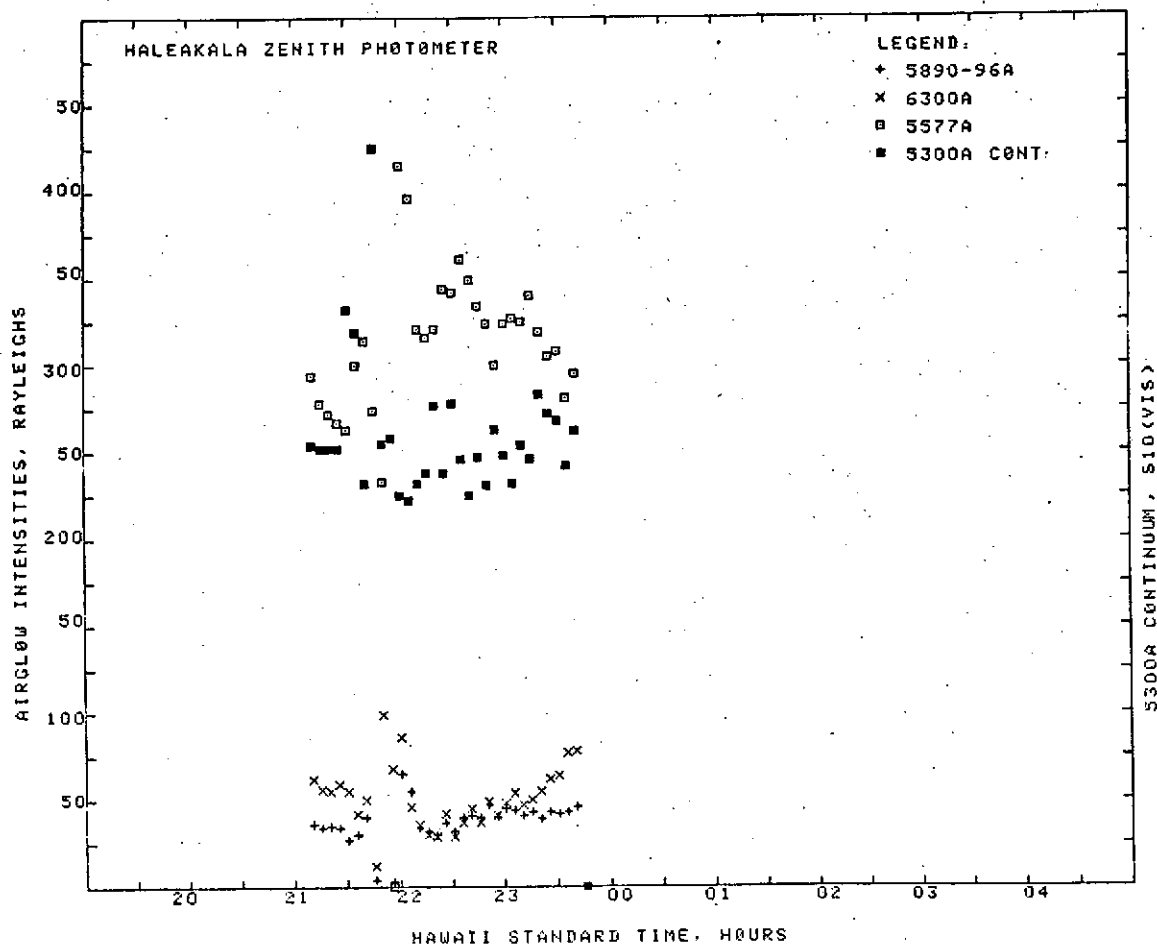
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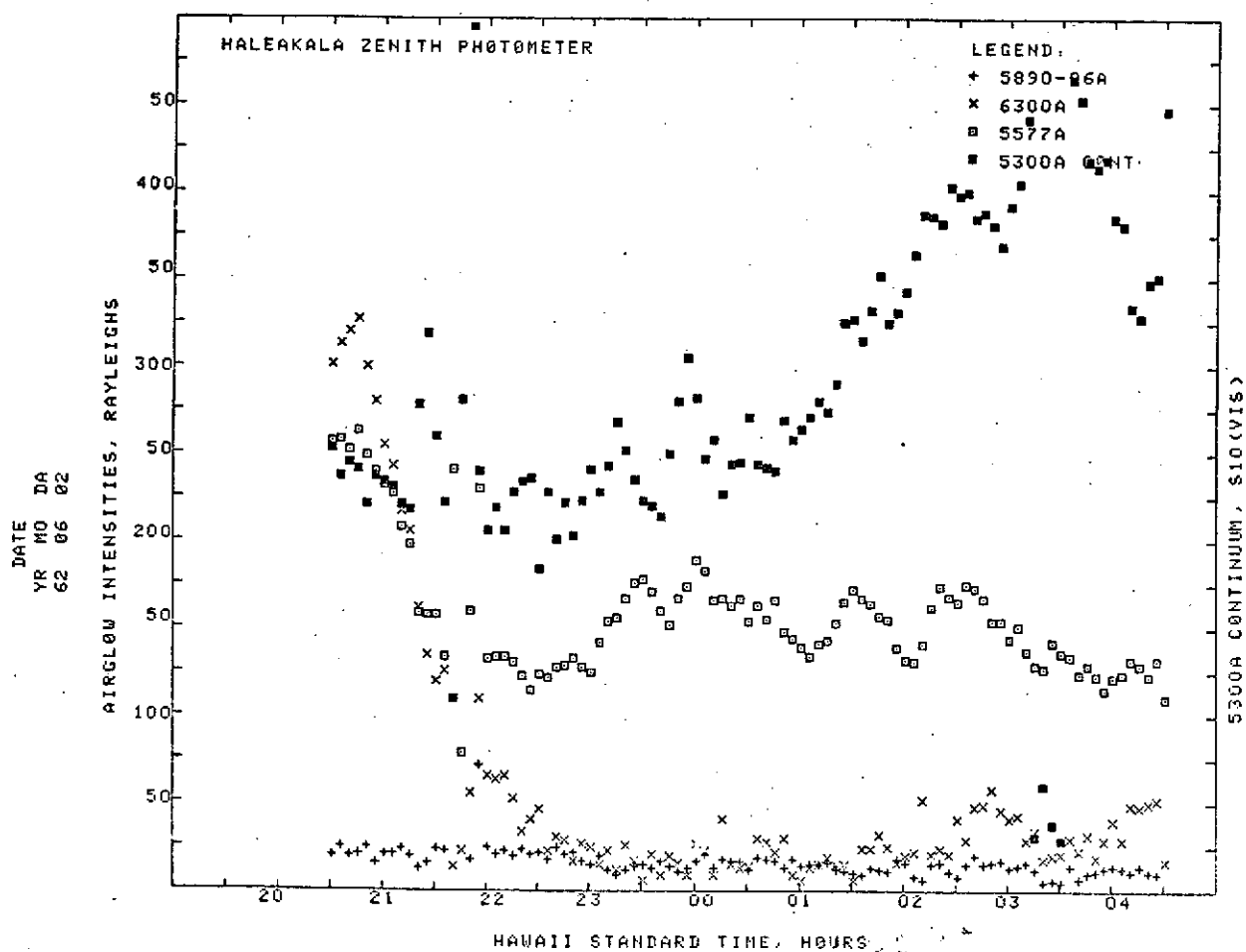
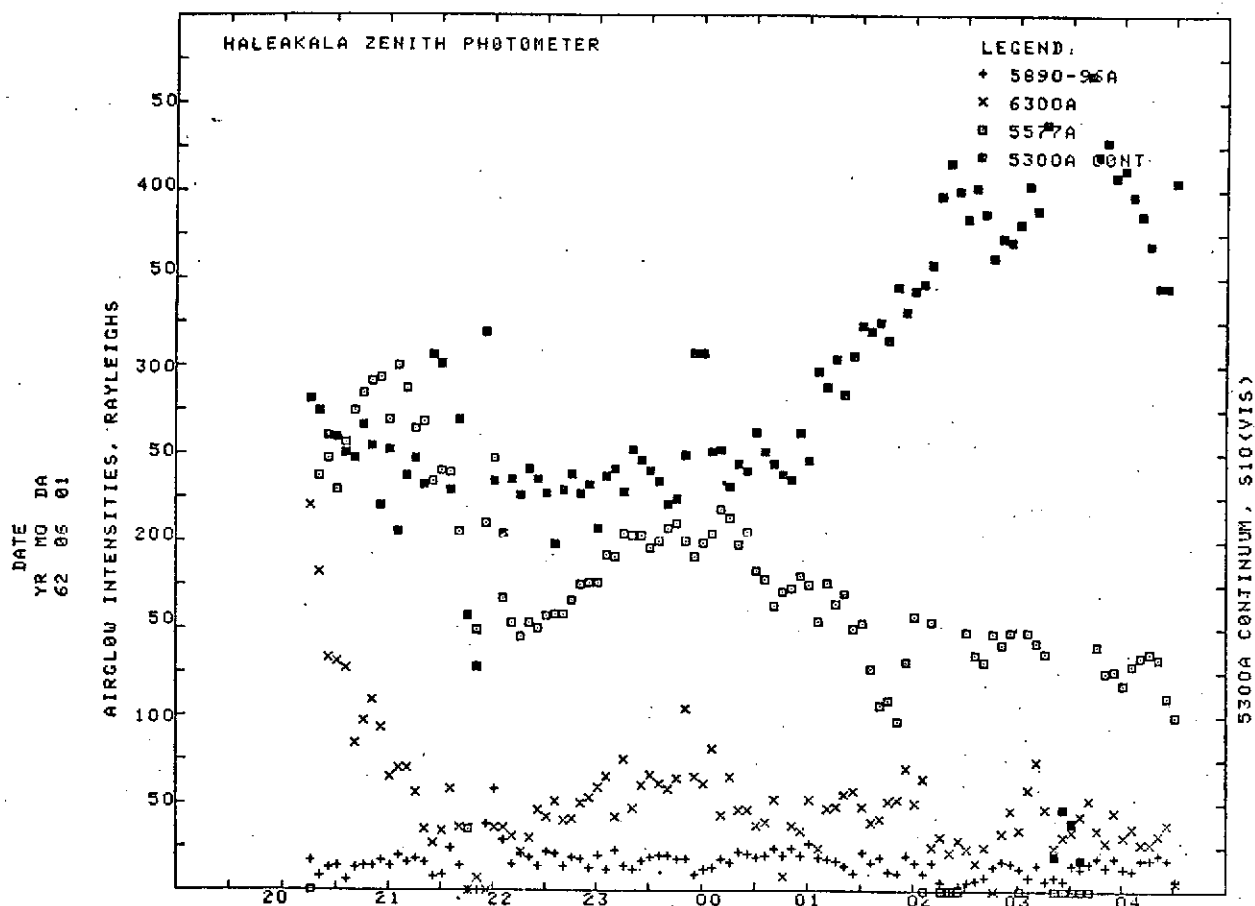


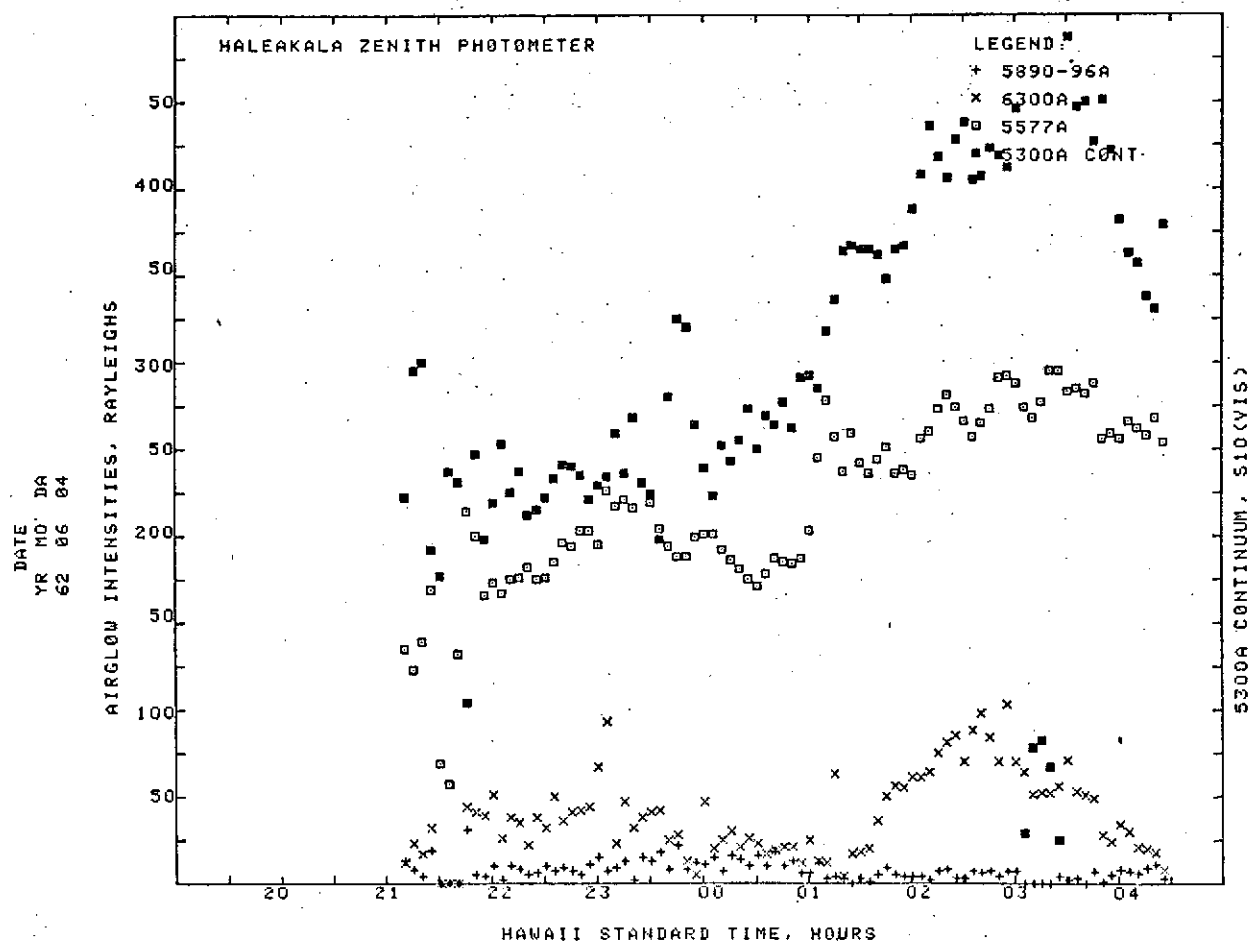
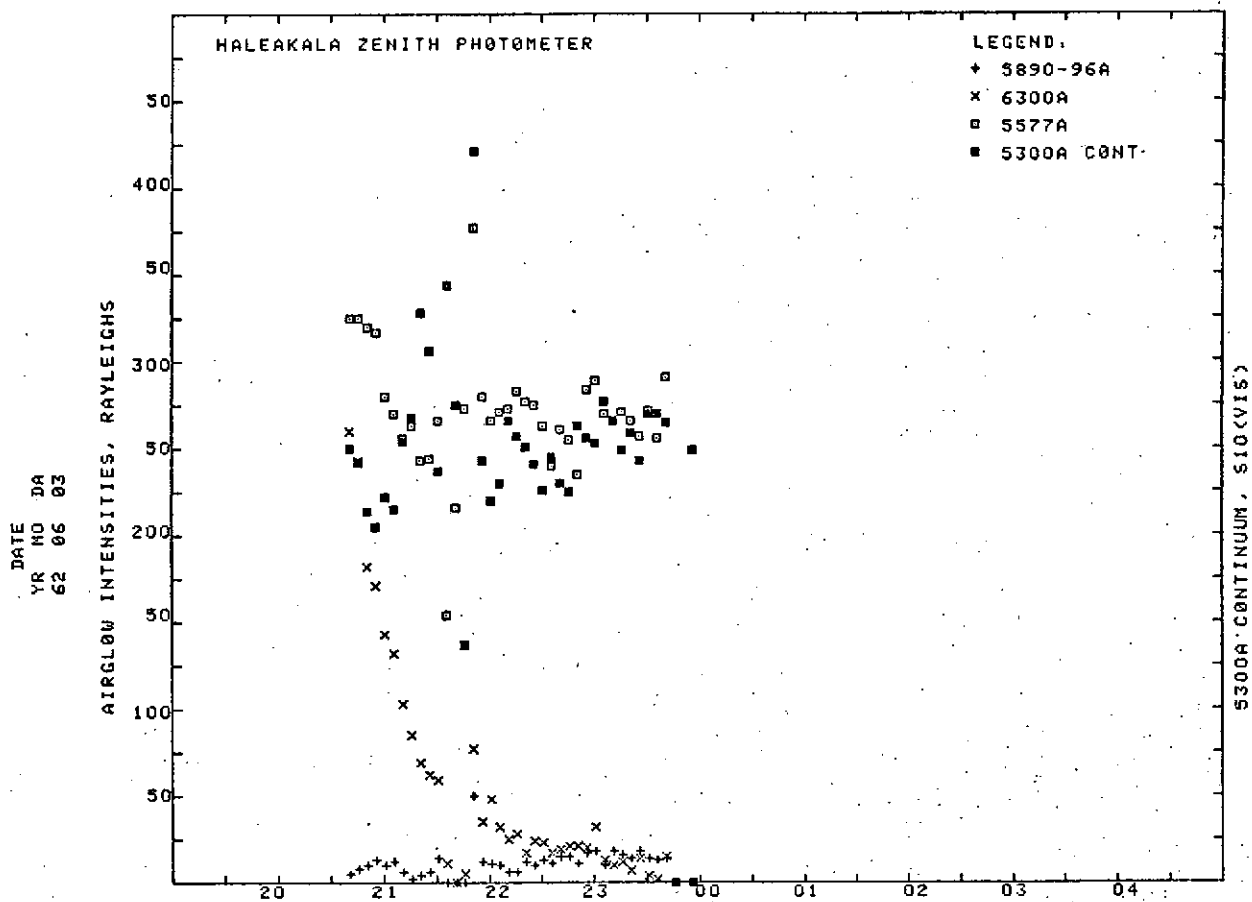
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DATE  
YR MO DA  
62 05 31



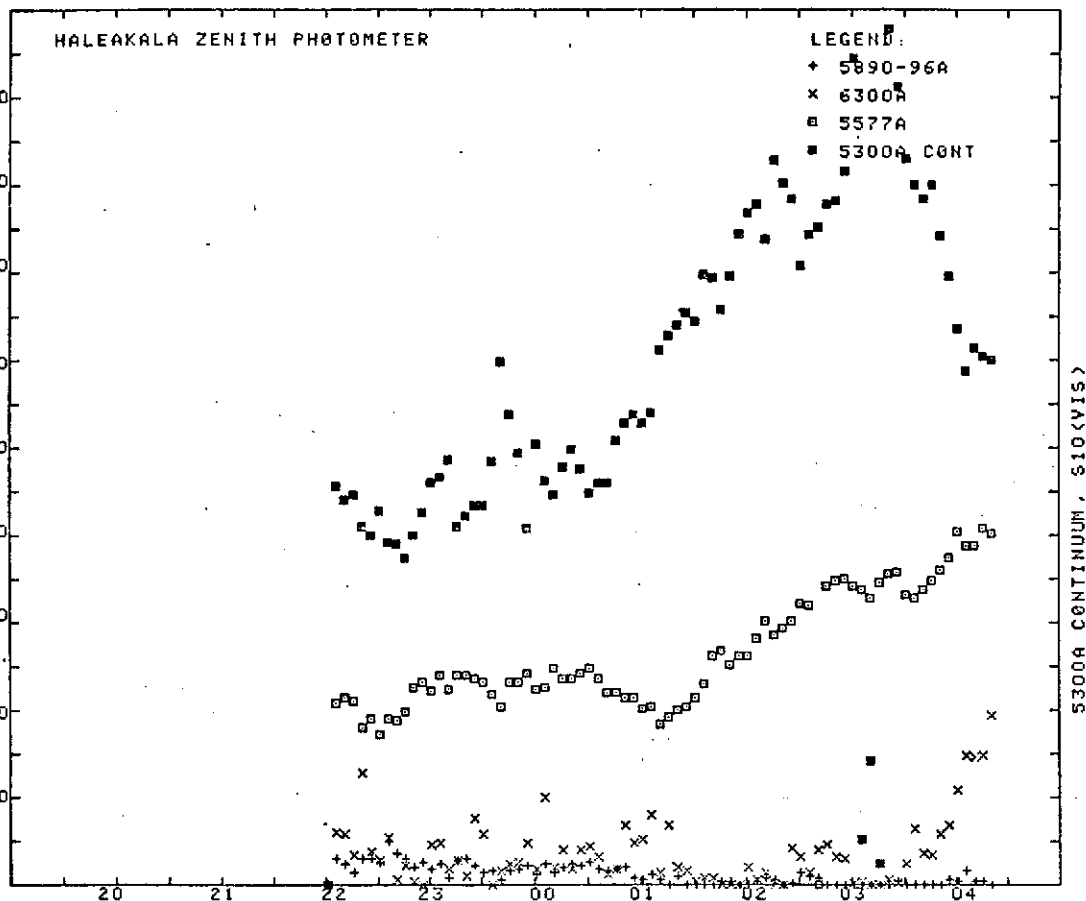






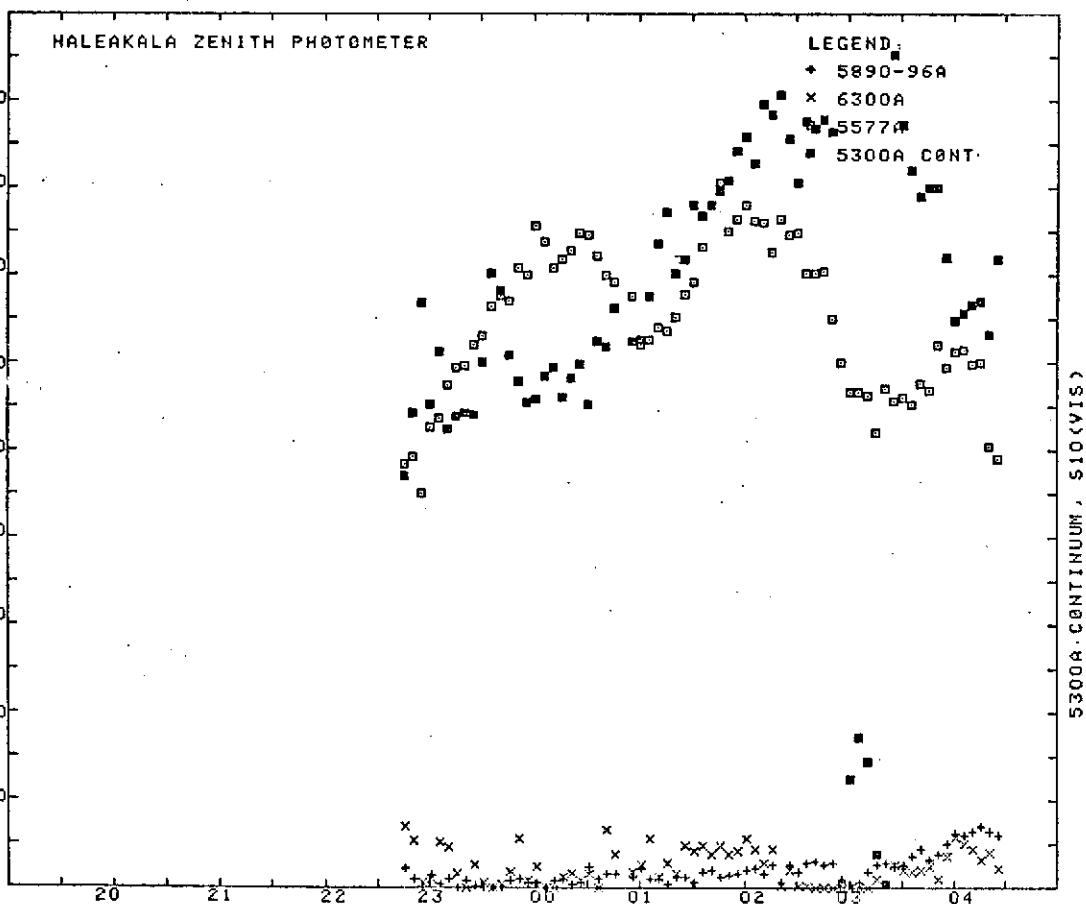
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AIRGLOW INTENSITIES, RAYLEIGHS

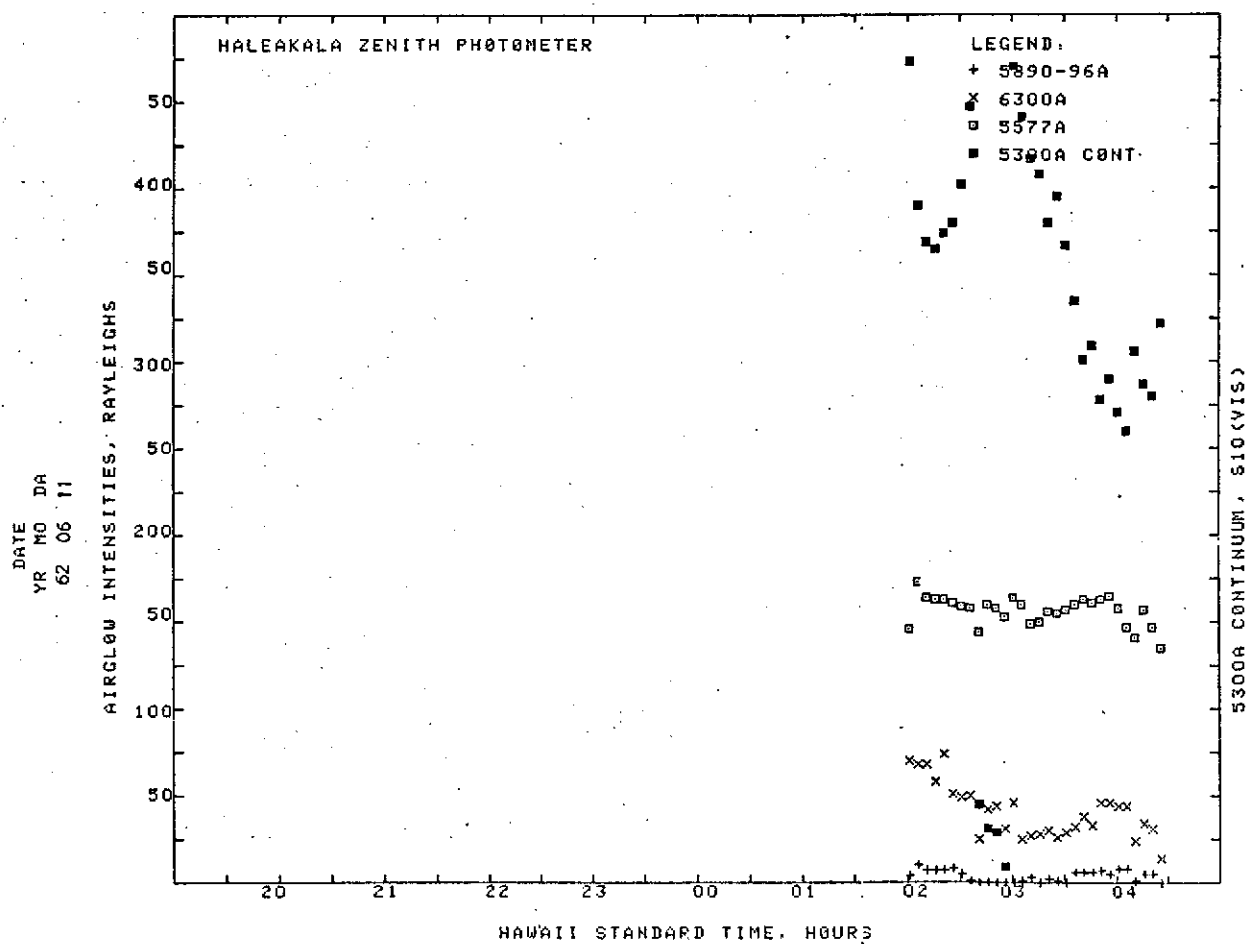
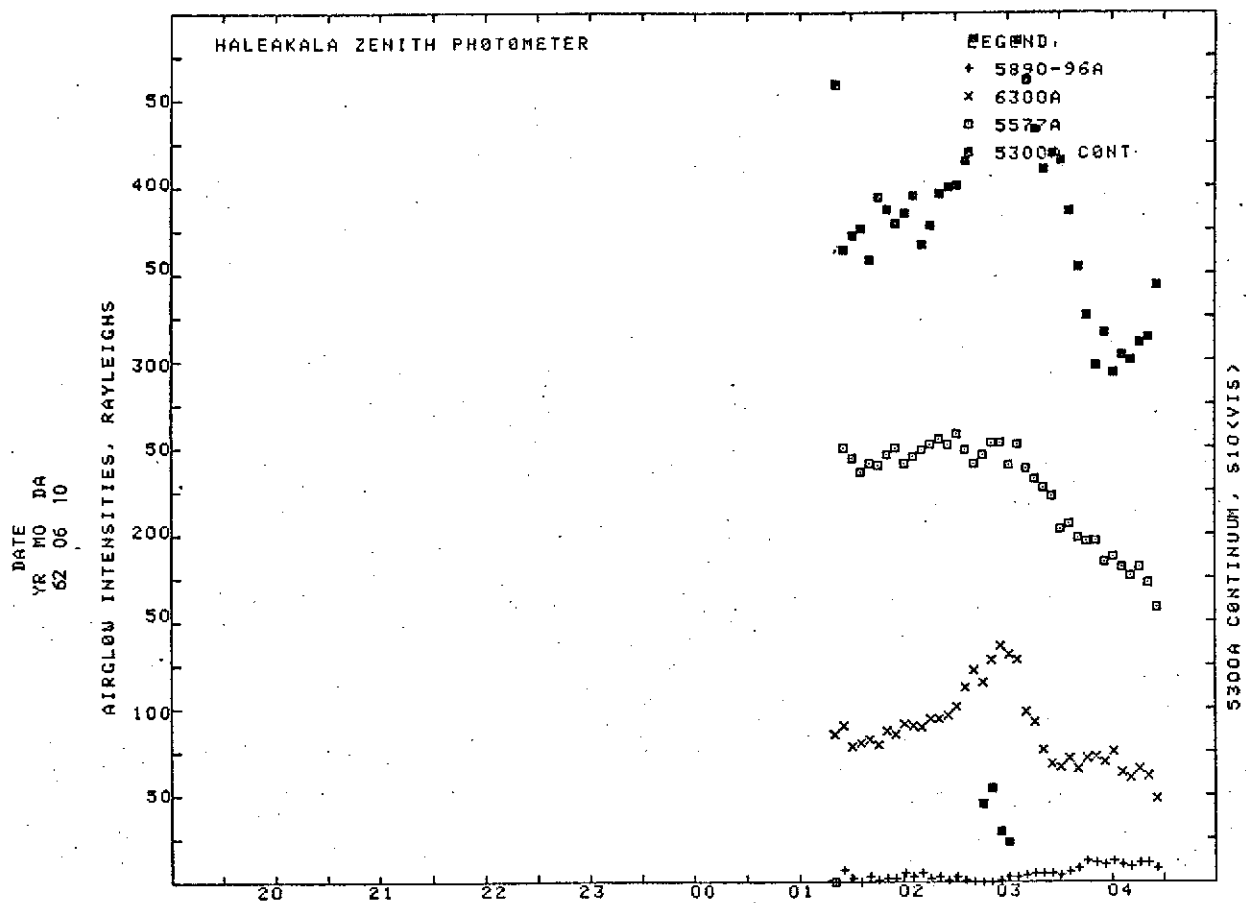


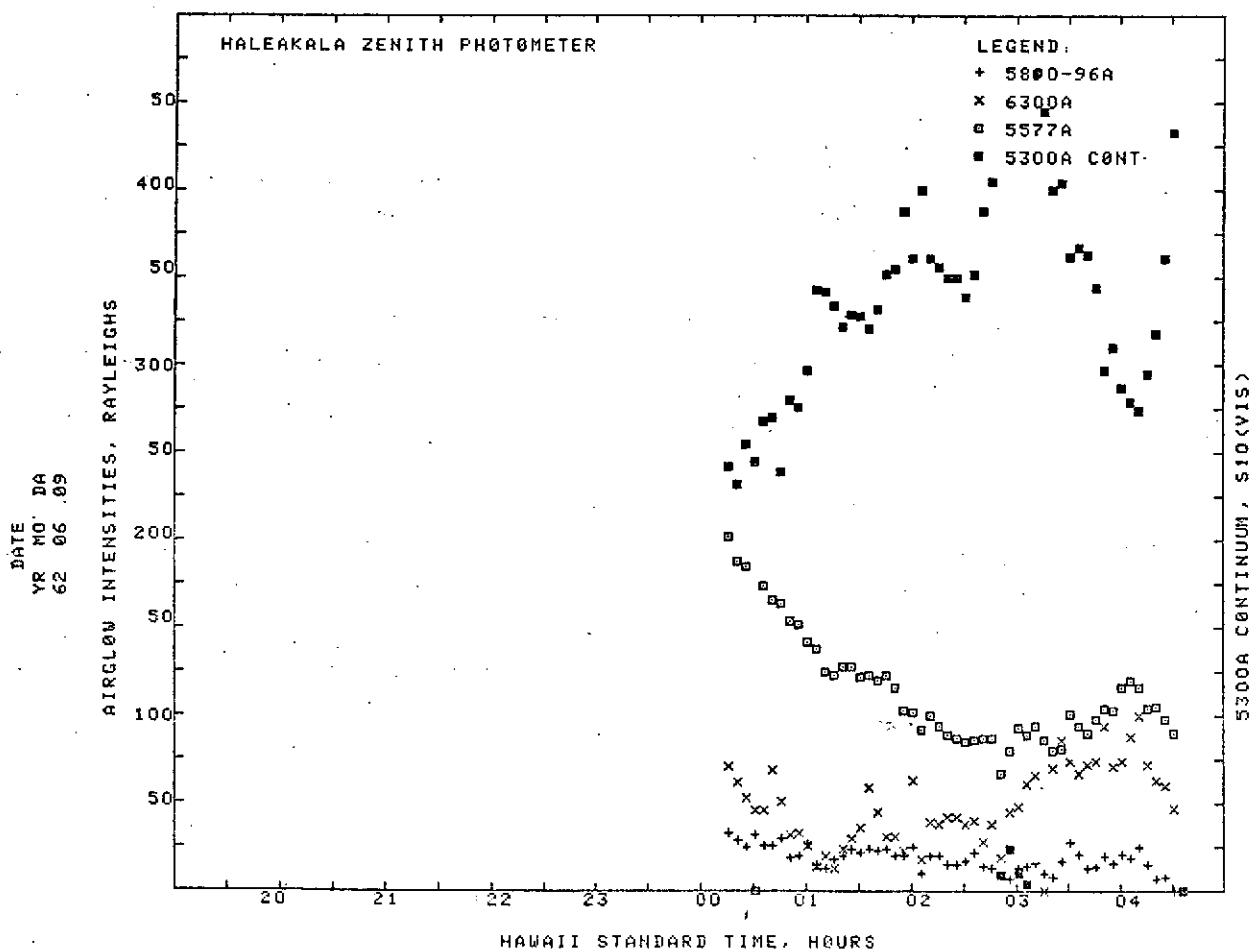
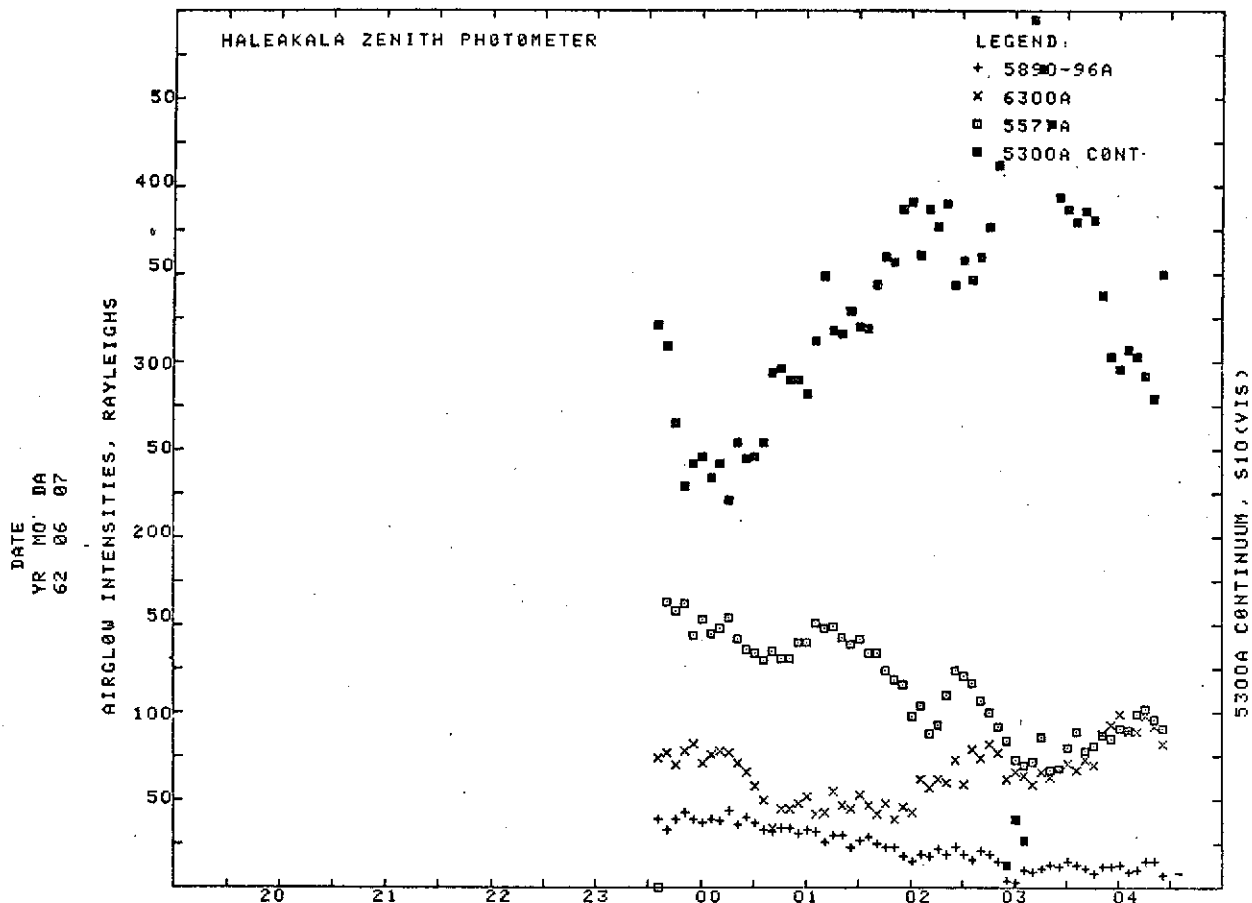
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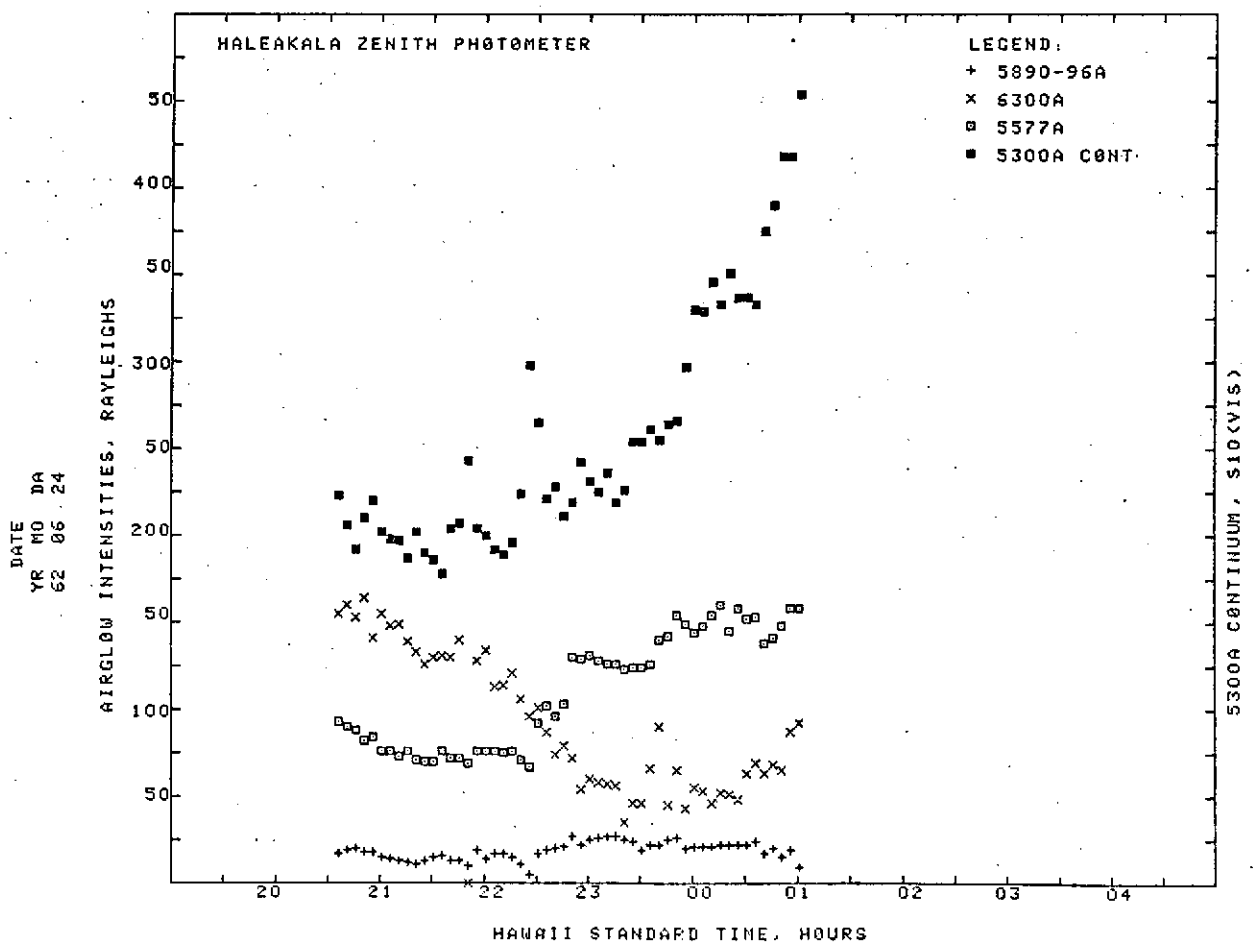
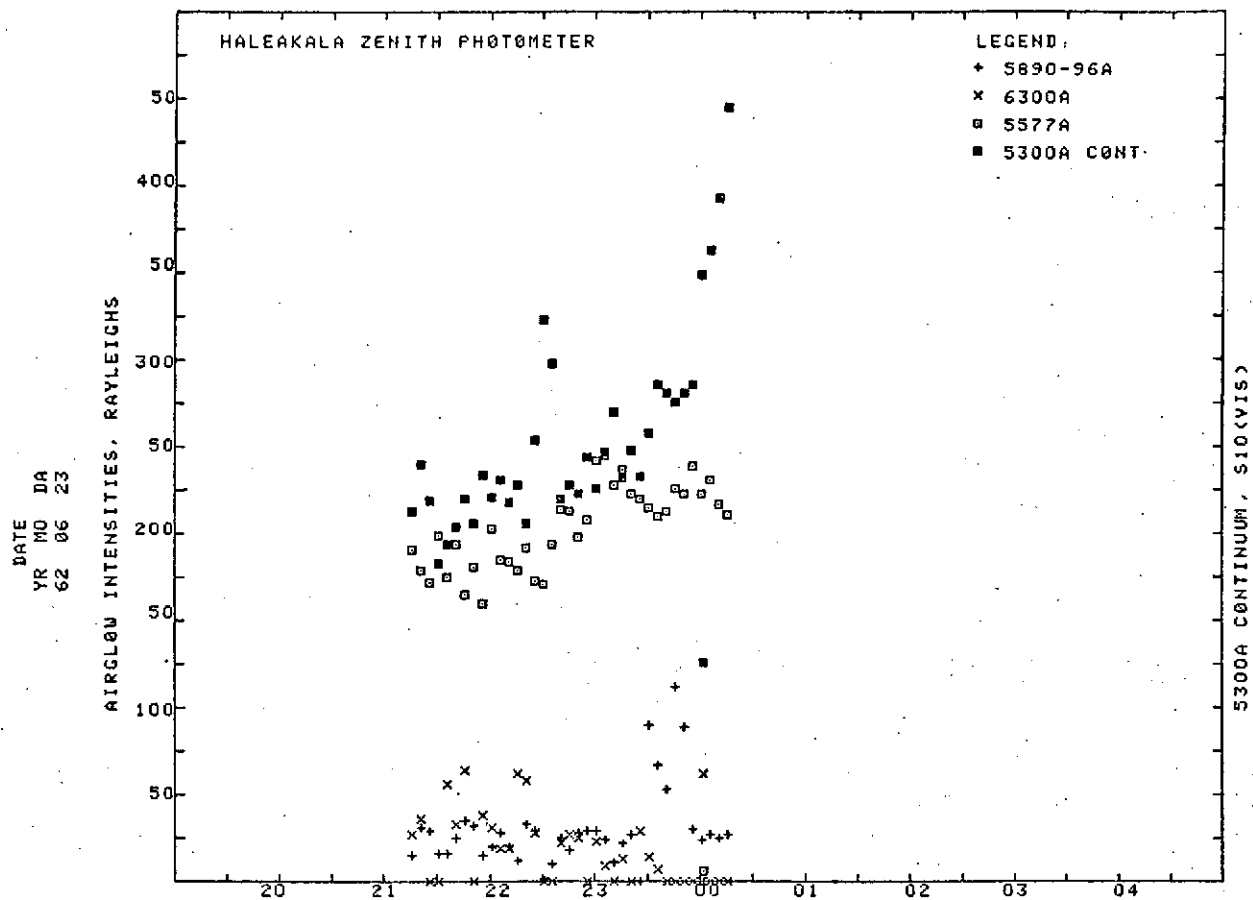
AIRGLOW INTENSITIES, RAYLEIGHS

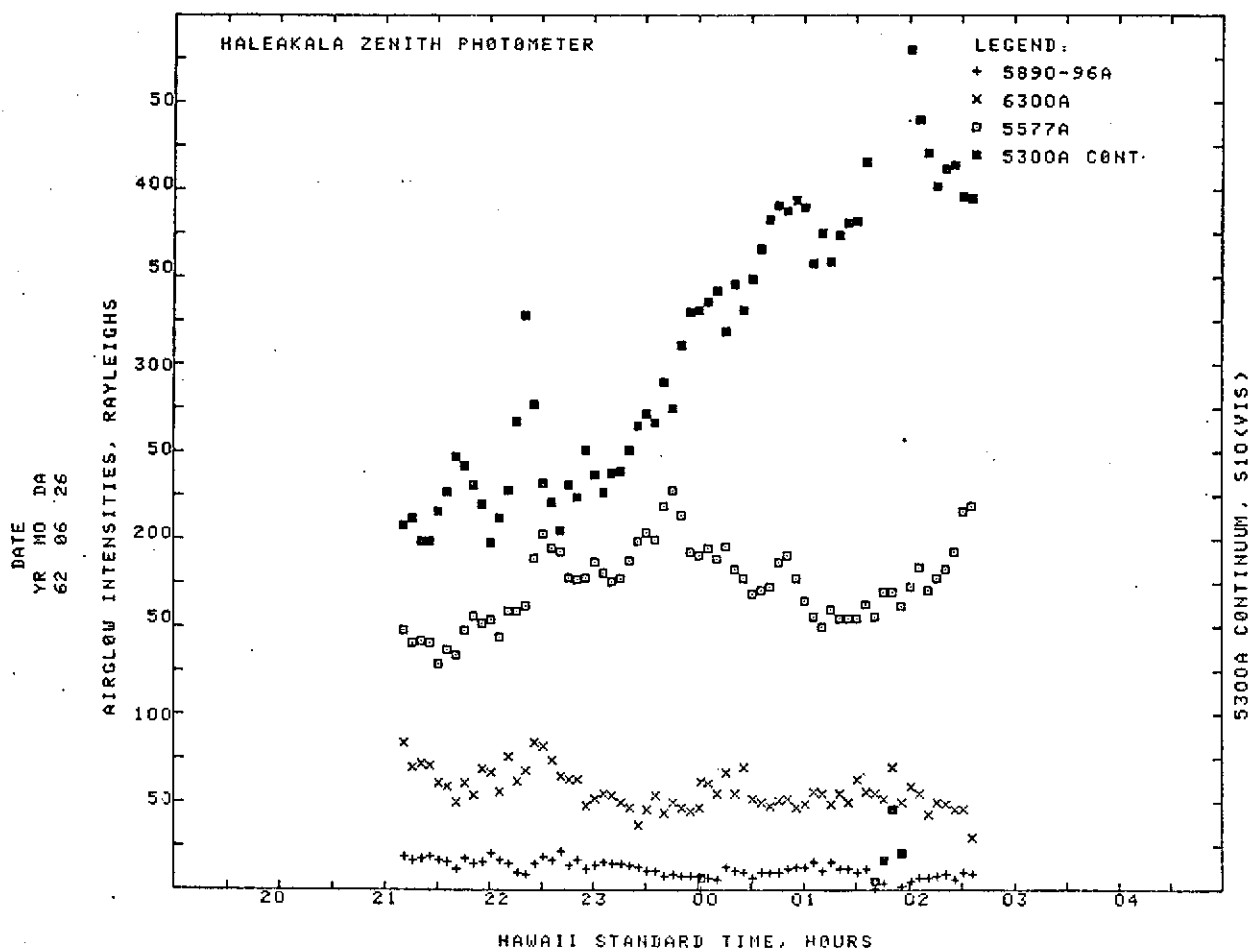
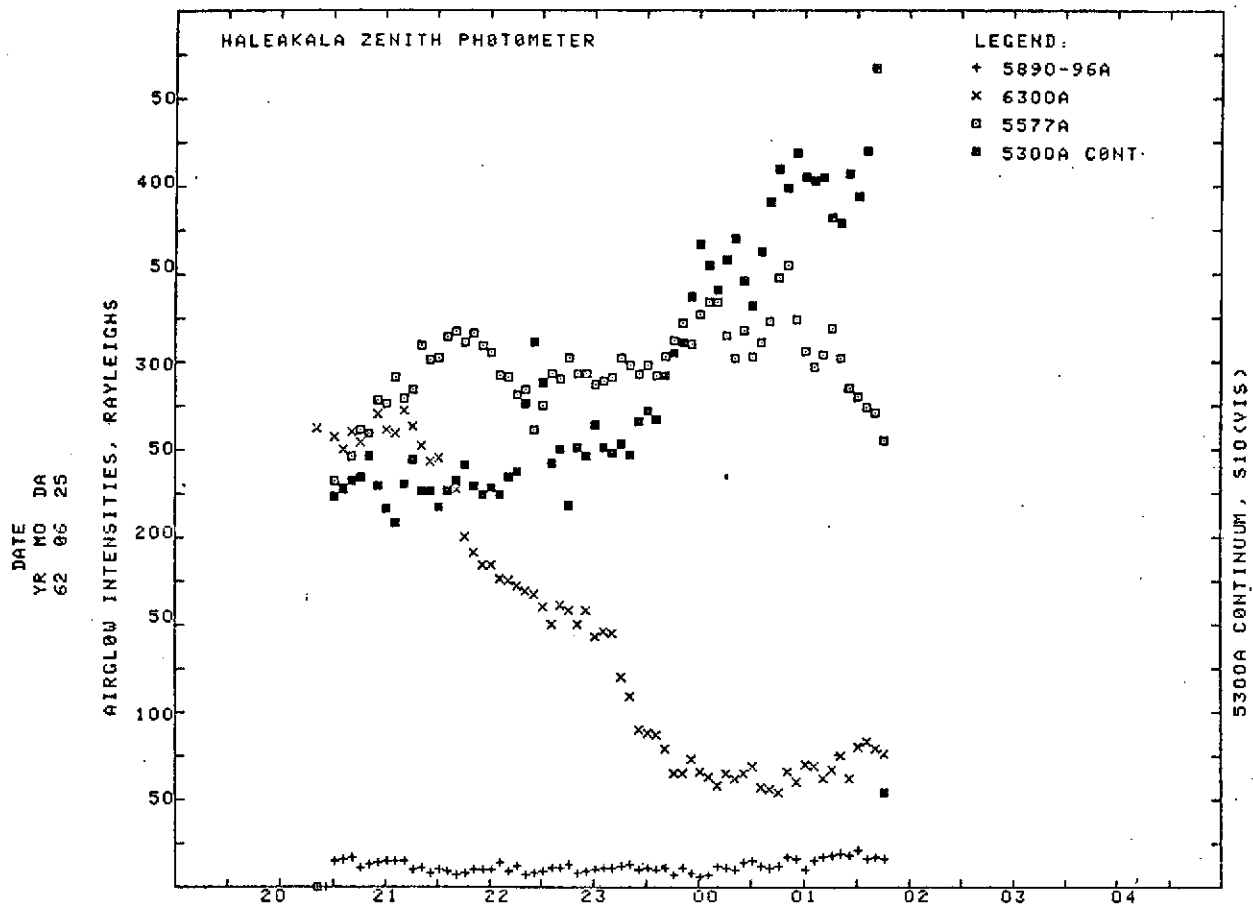


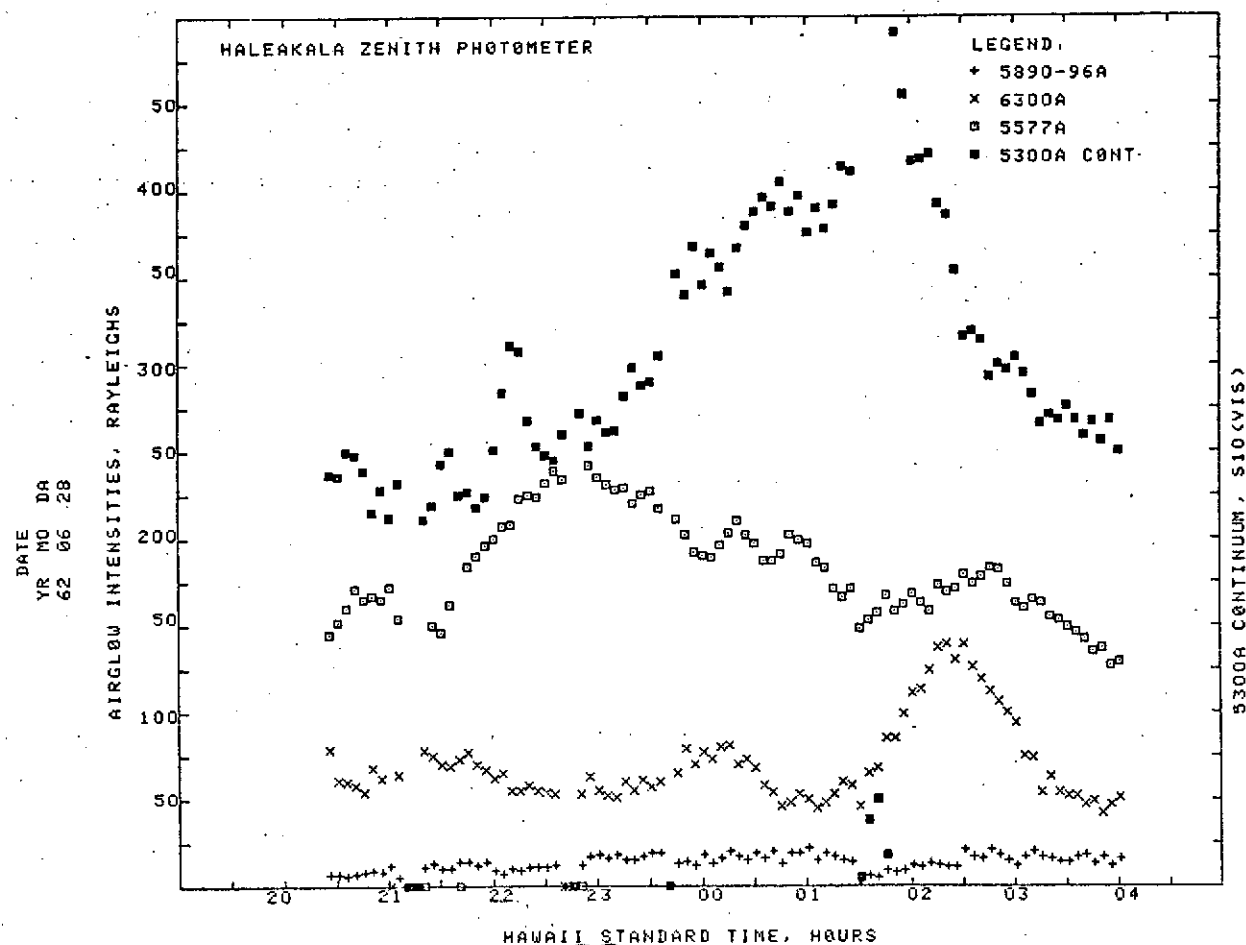
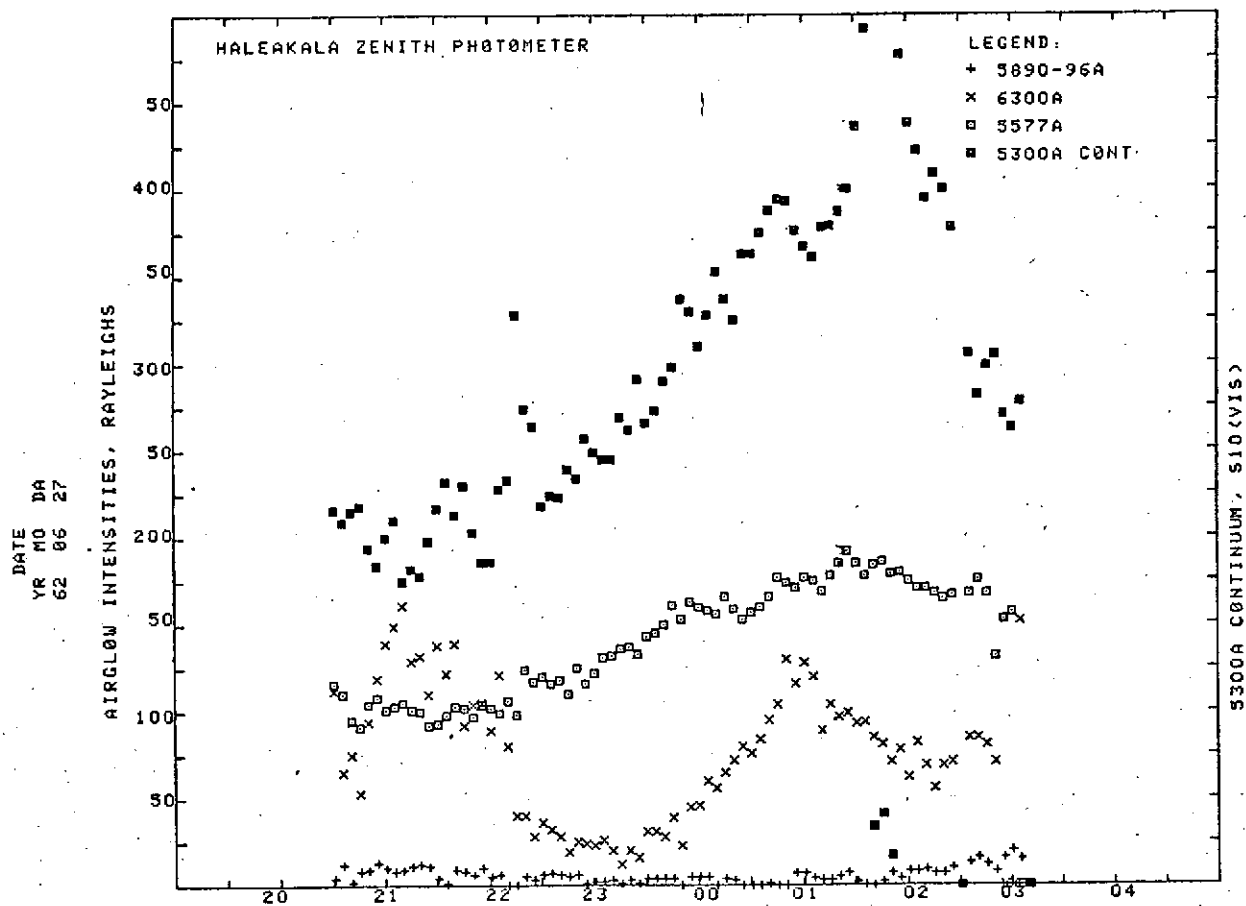
HAWAII STANDARD TIME, HOURS



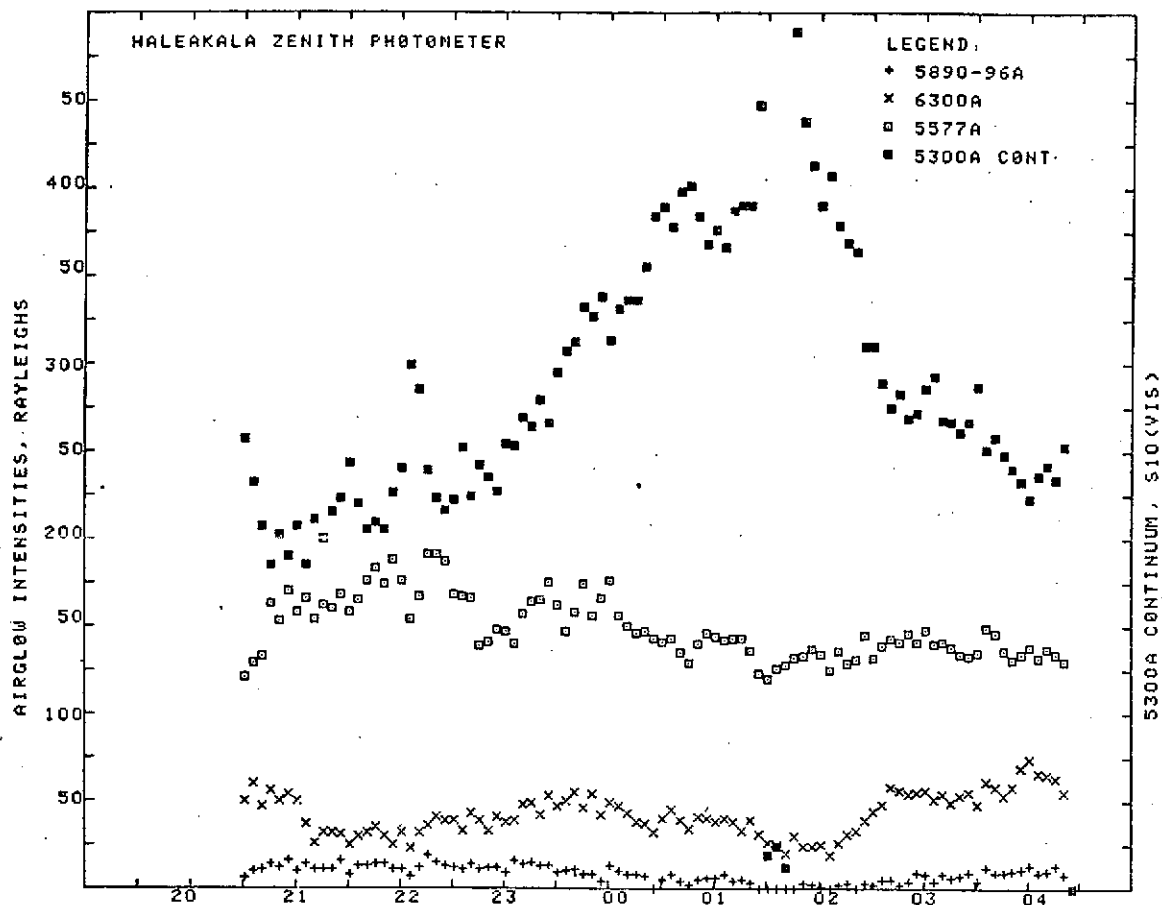




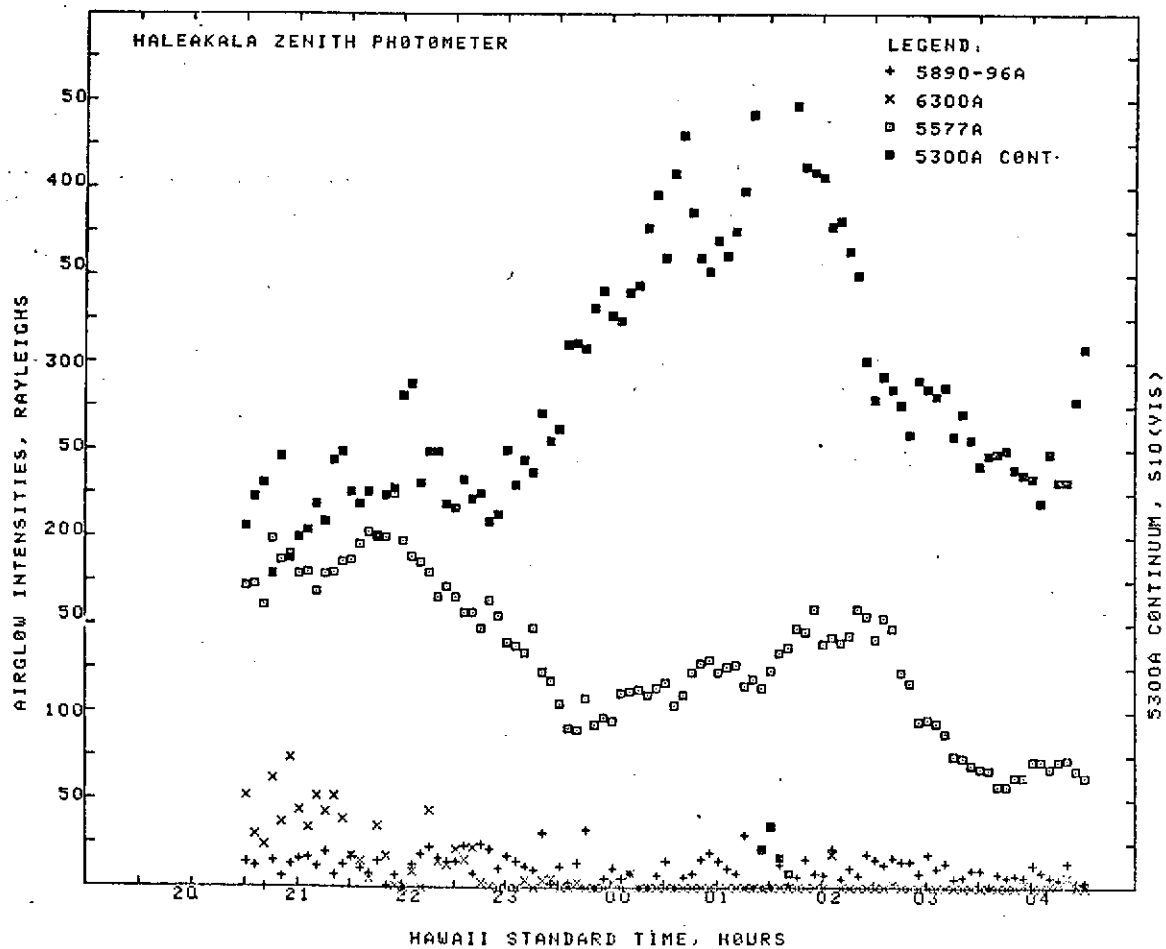


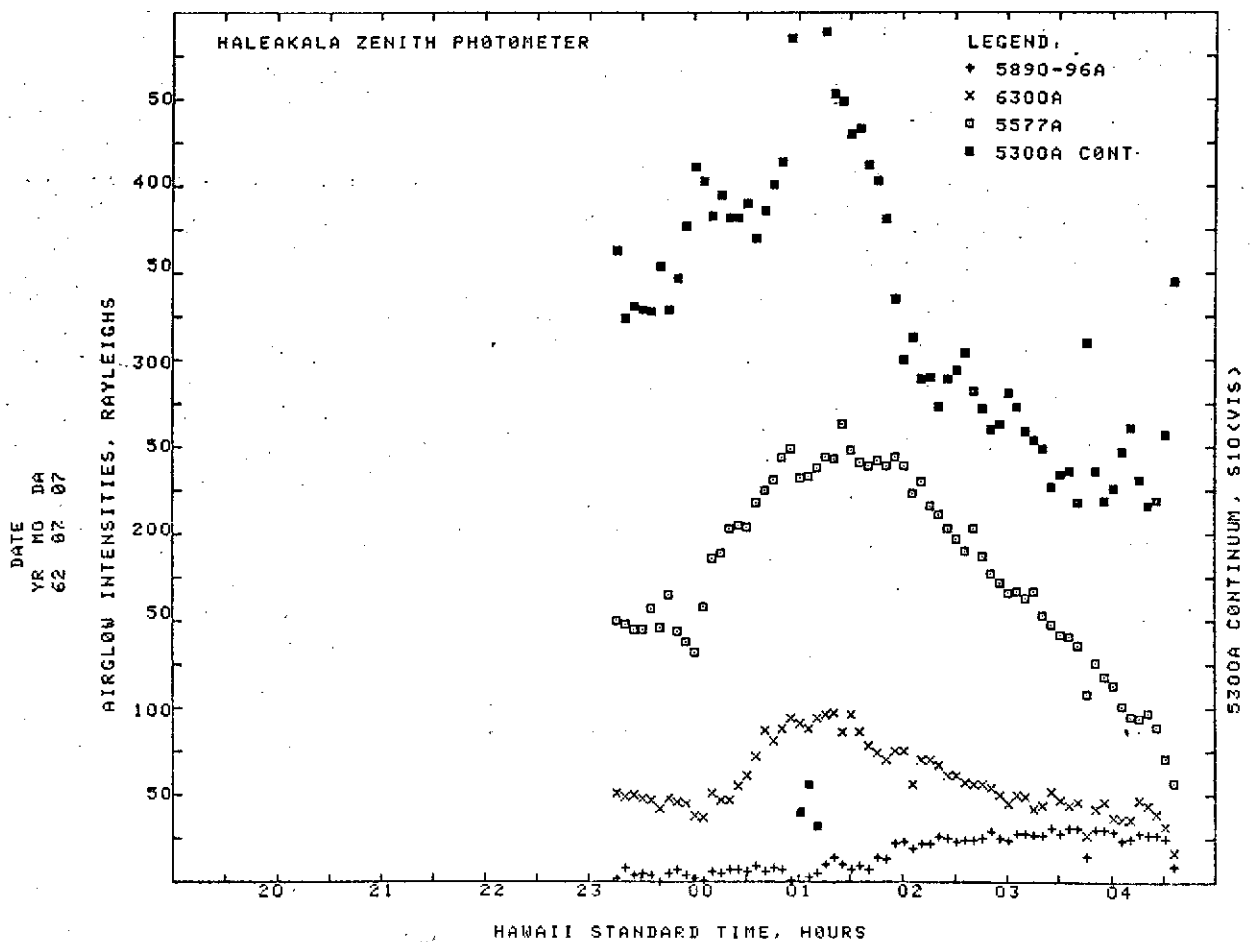
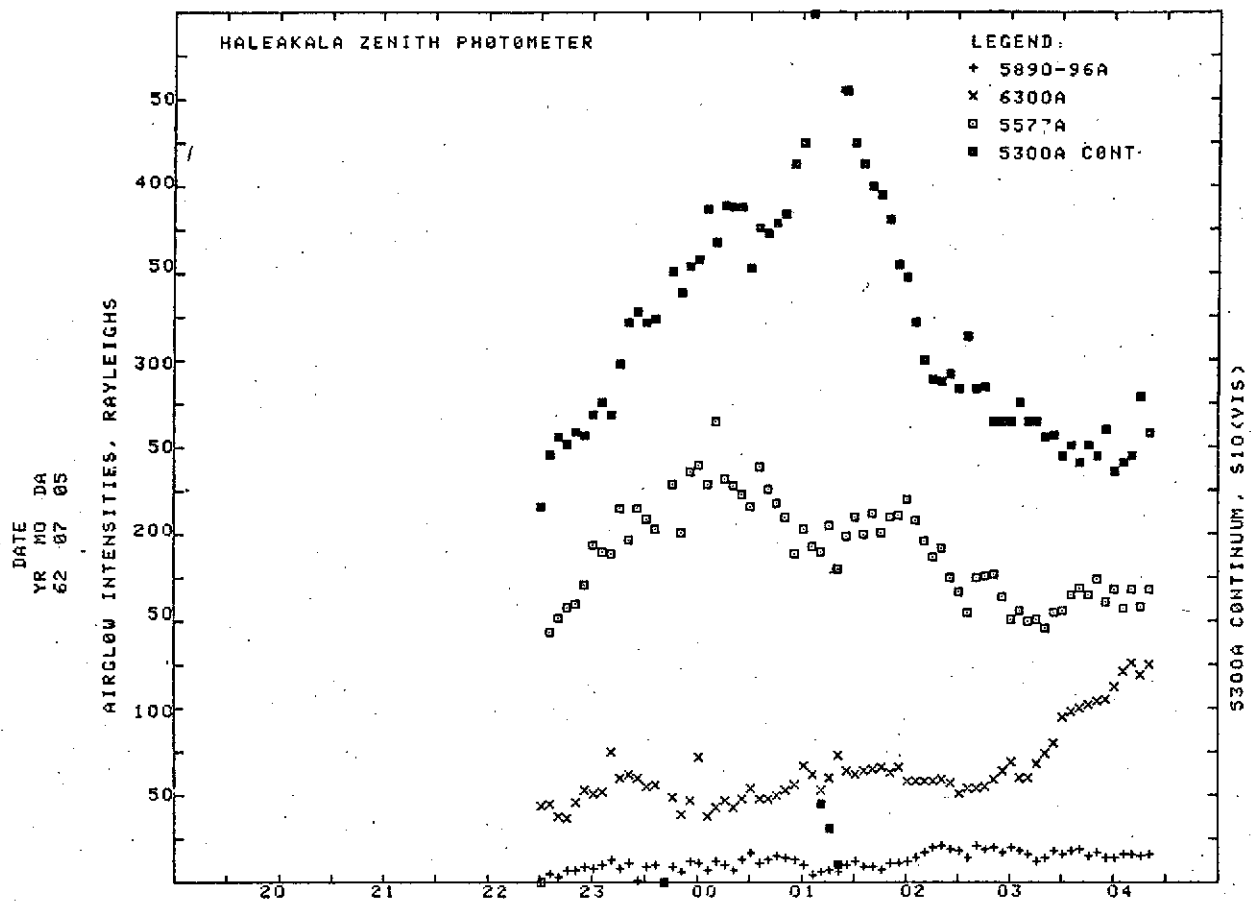


DATE  
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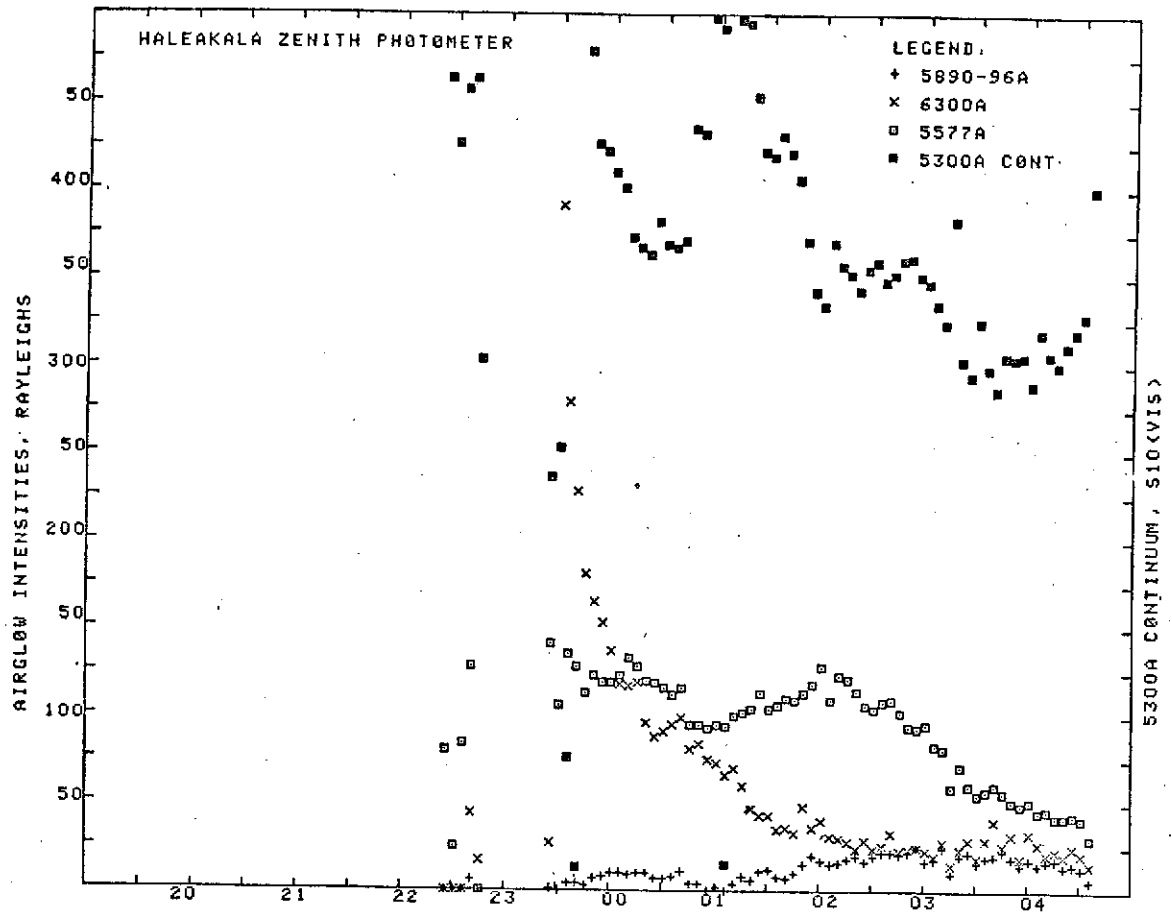
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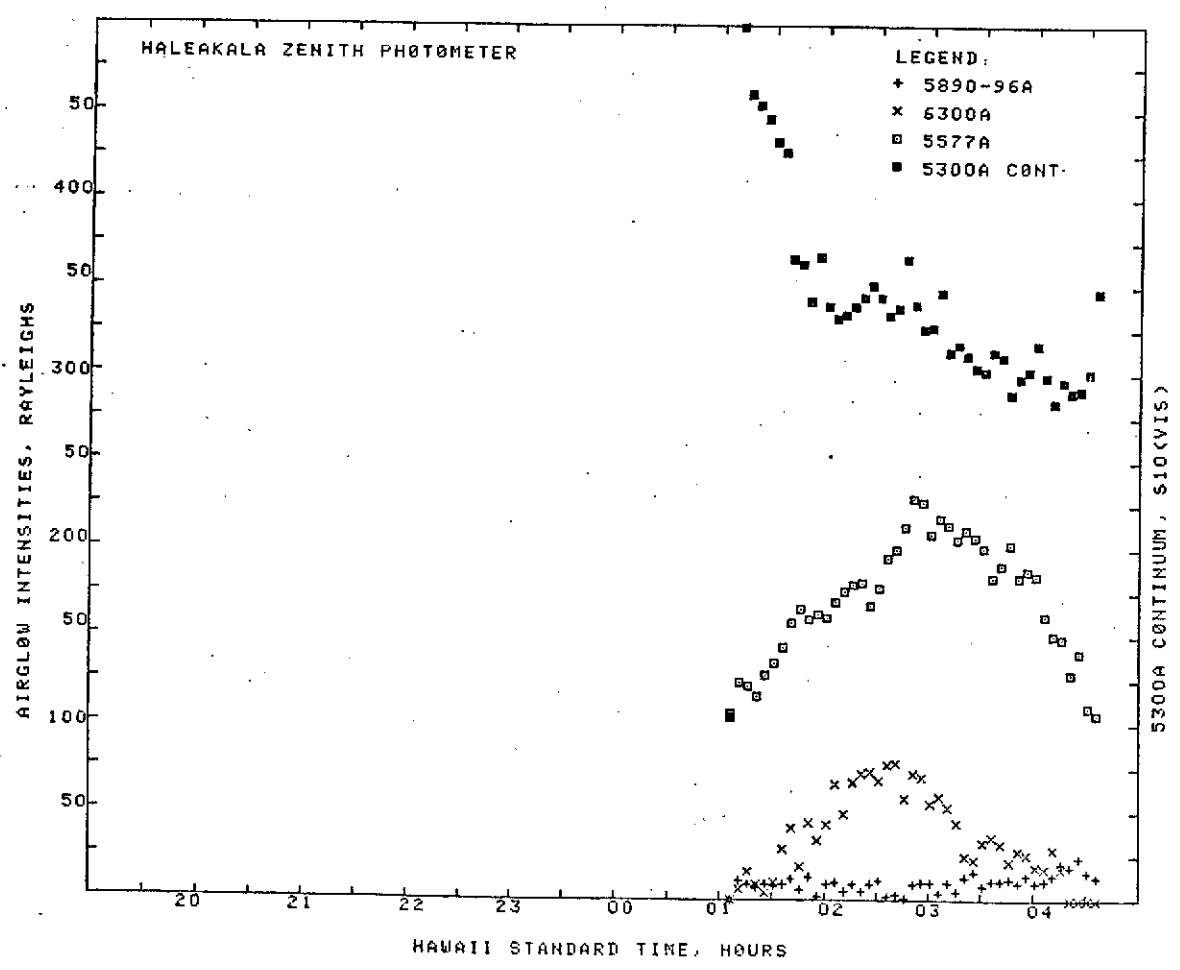




DATE  
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DATE  
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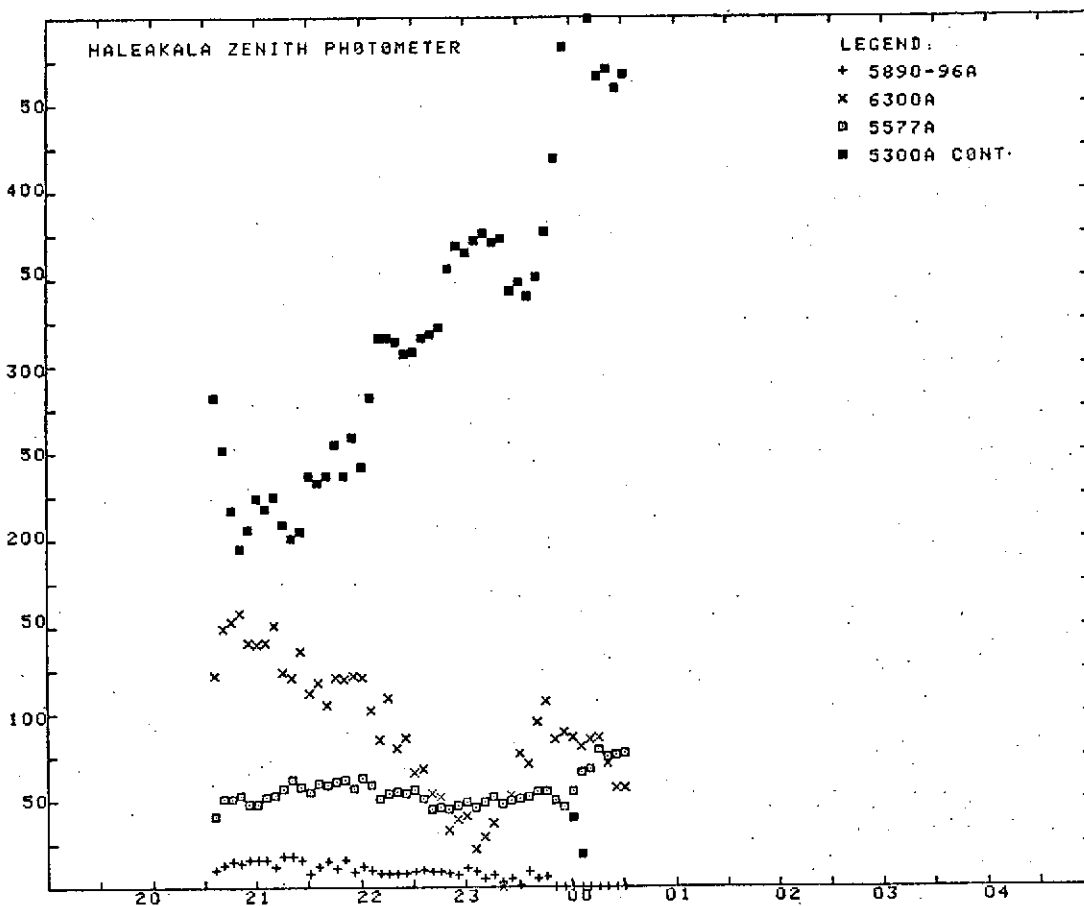


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AIRGLOW INTENSITIES, RAYLEIGHS

HALEAKALA ZENITH PHOTOMETER

LEGEND:  
+ 5890-96A  
x 6300A  
□ 5577A  
■ 5300A CONT.



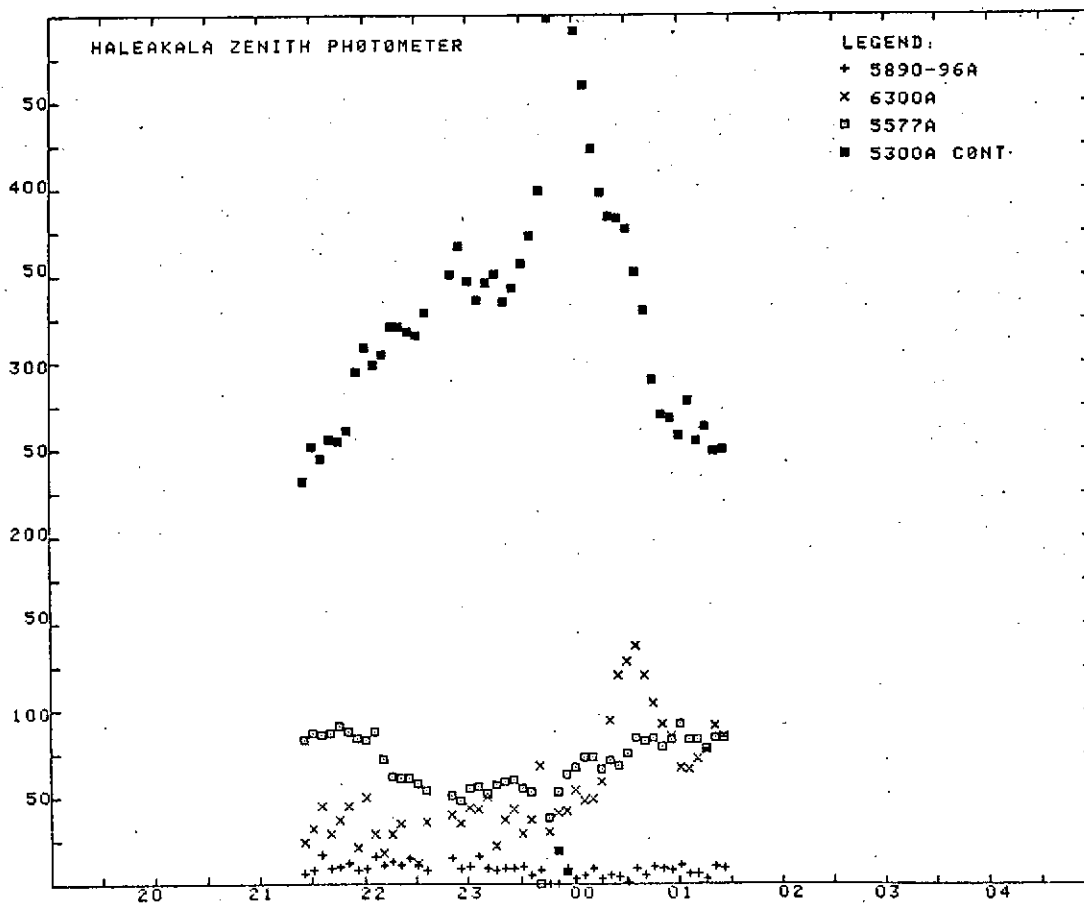
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DATE  
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AIRGLOW INTENSITIES, RAYLEIGHS

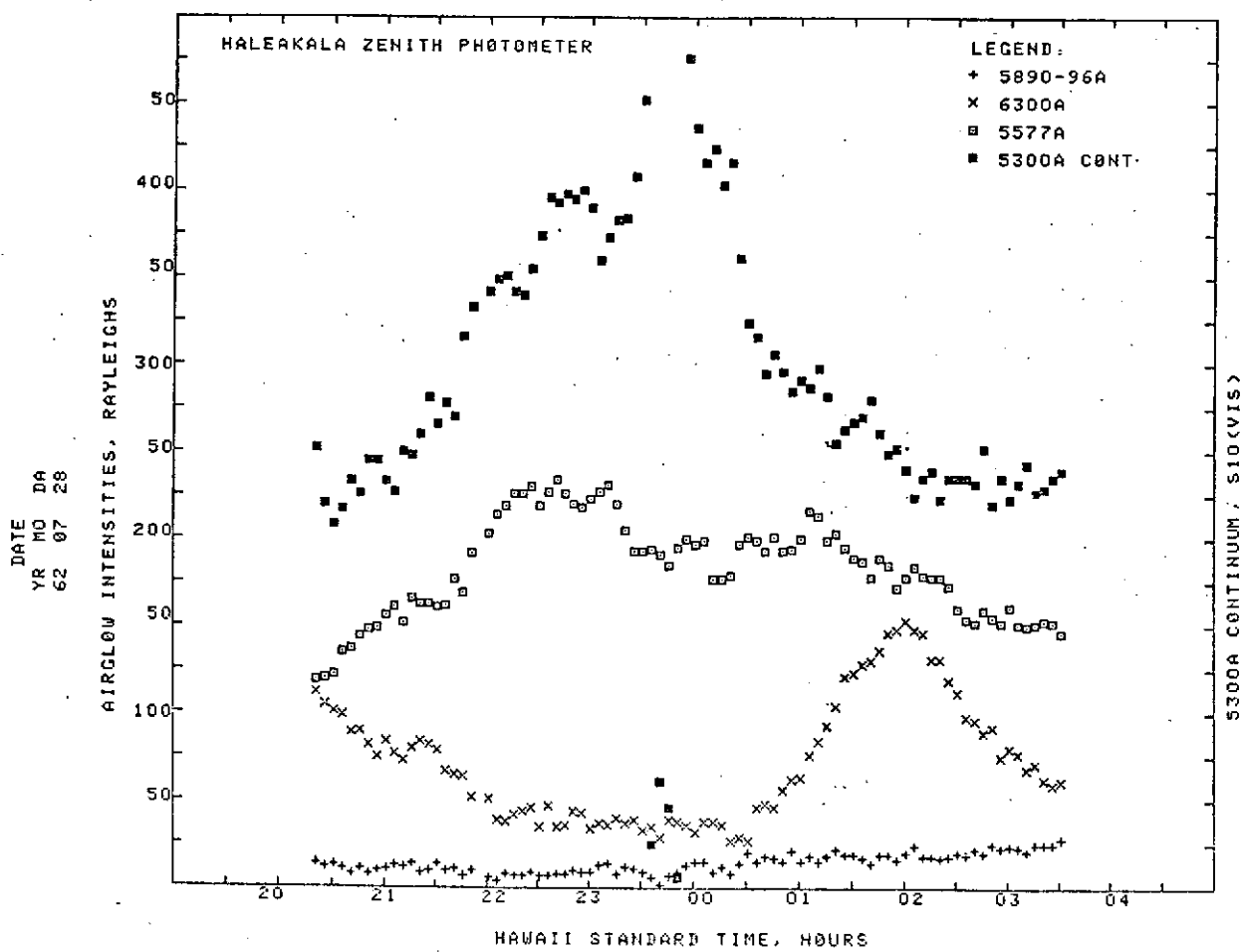
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LEGEND:  
+ 5890-96A  
x 6300A  
□ 5577A  
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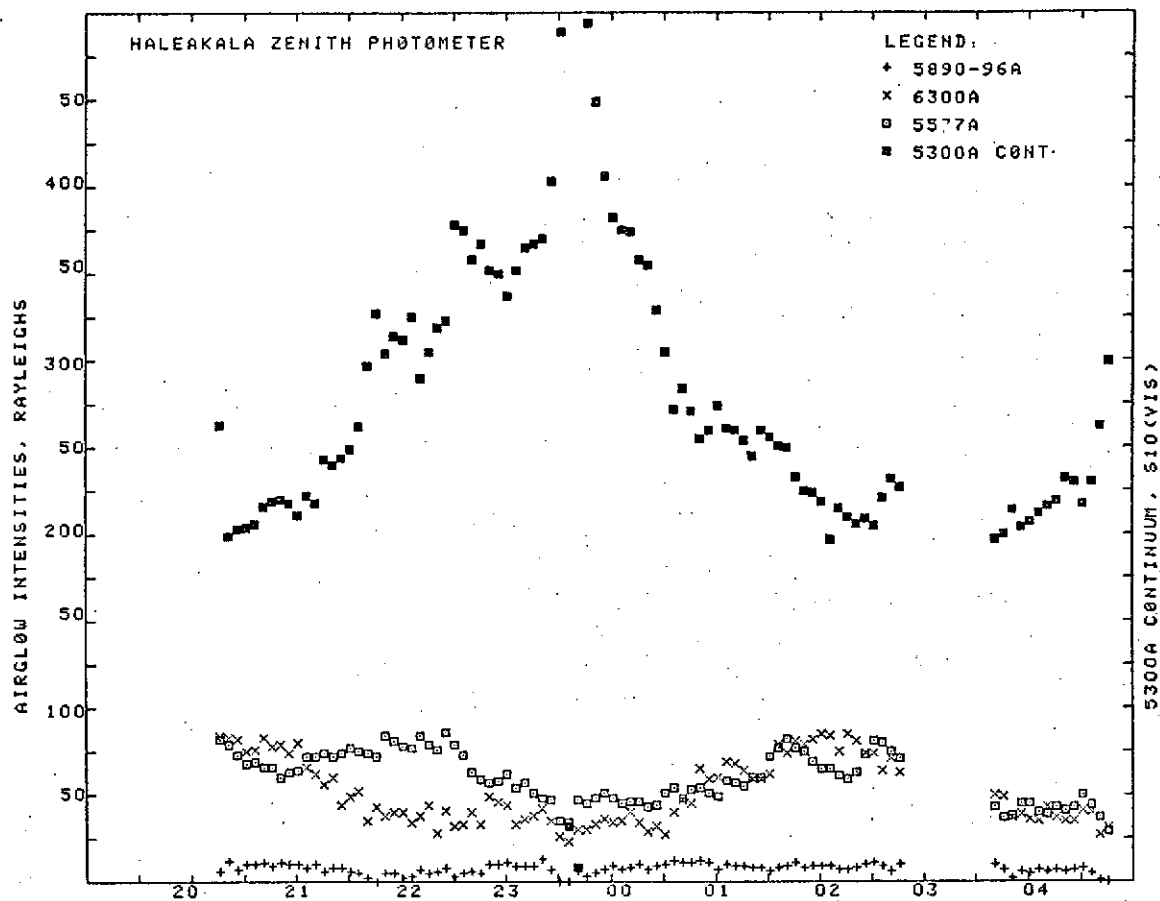


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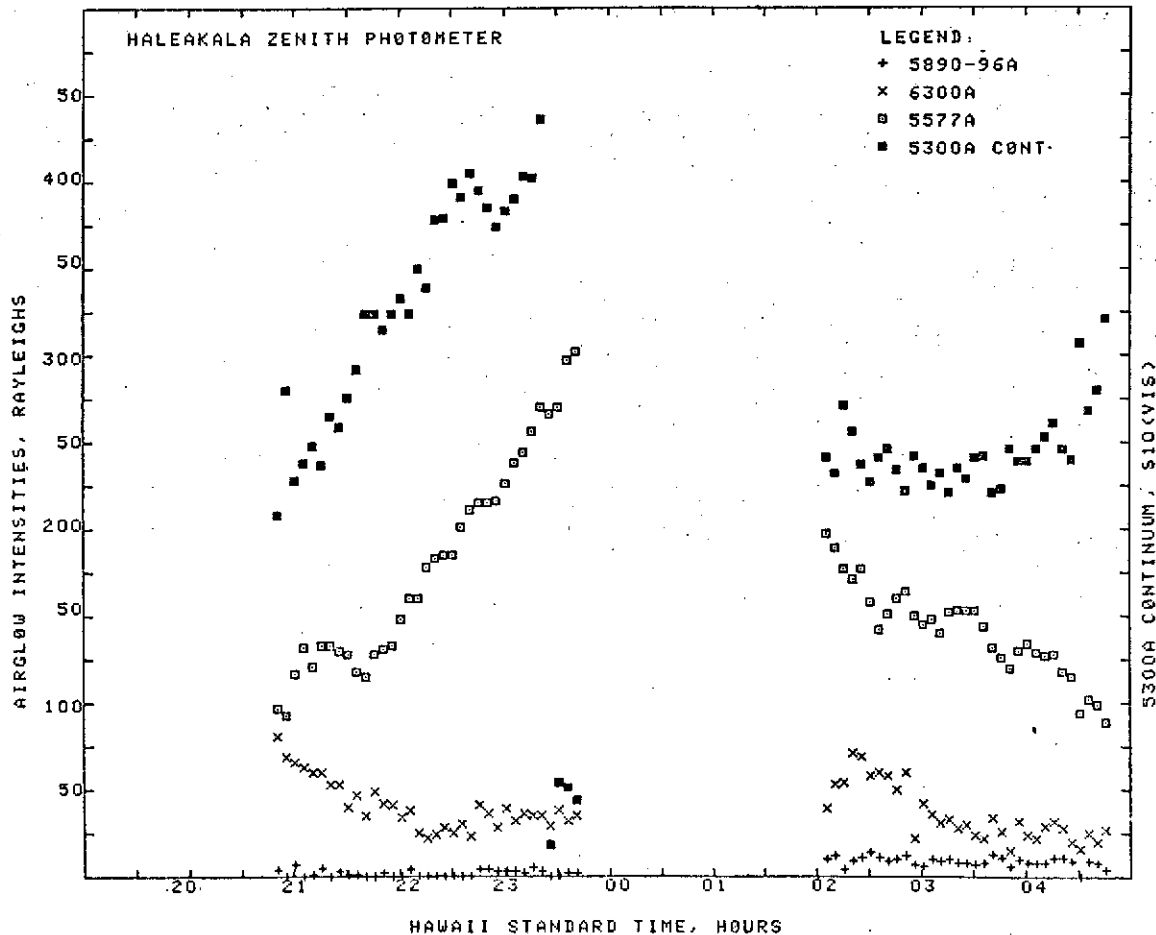
HAWAII STANDARD TIME, HOURS

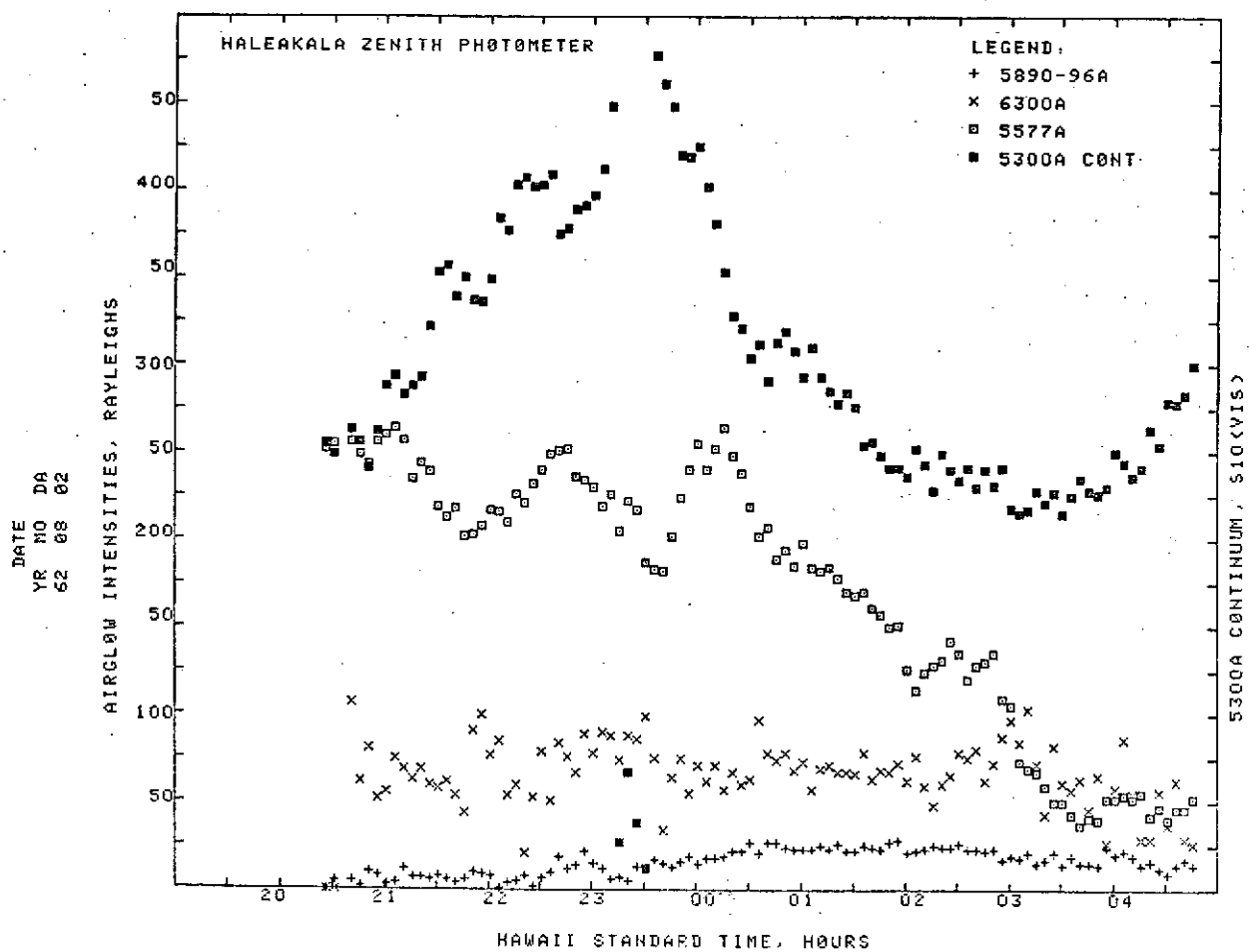
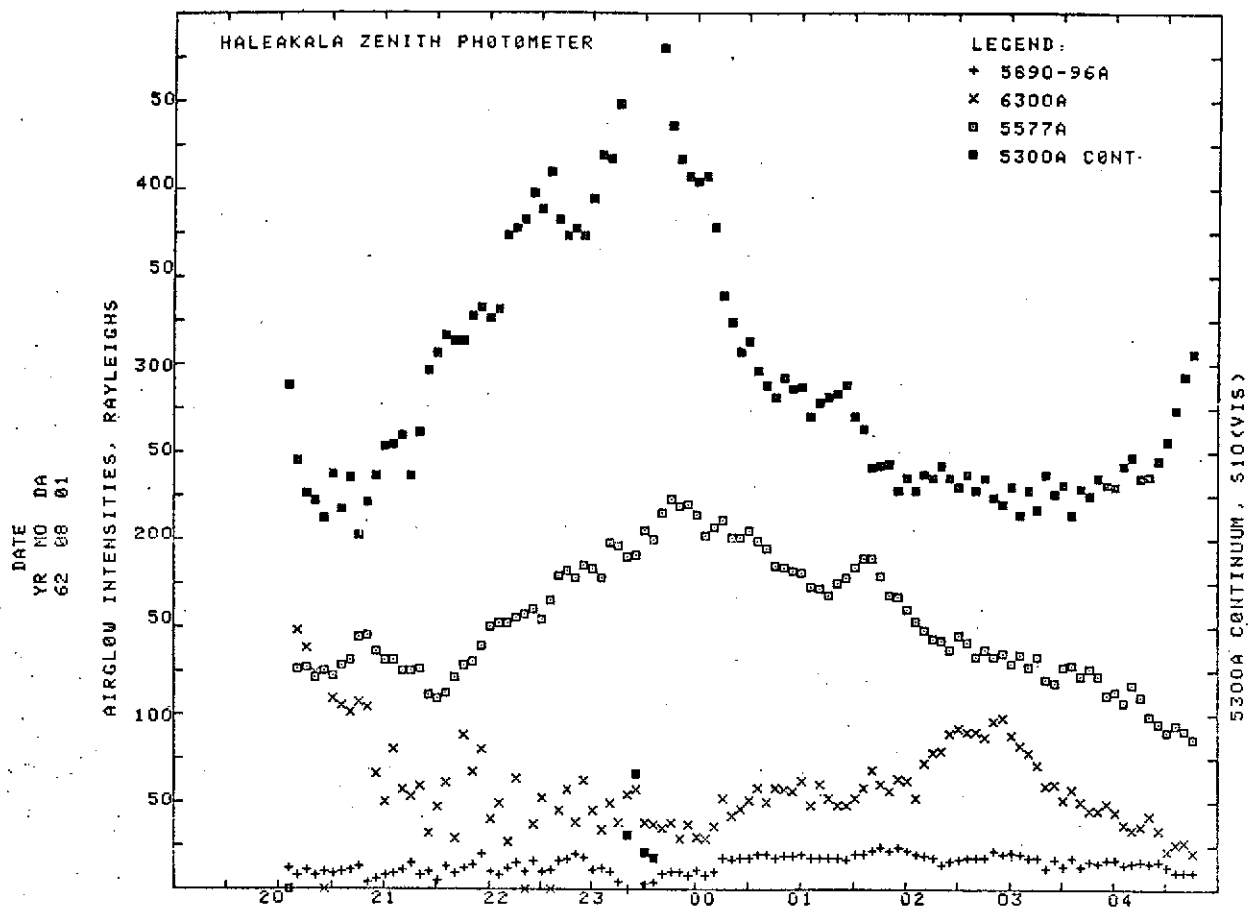


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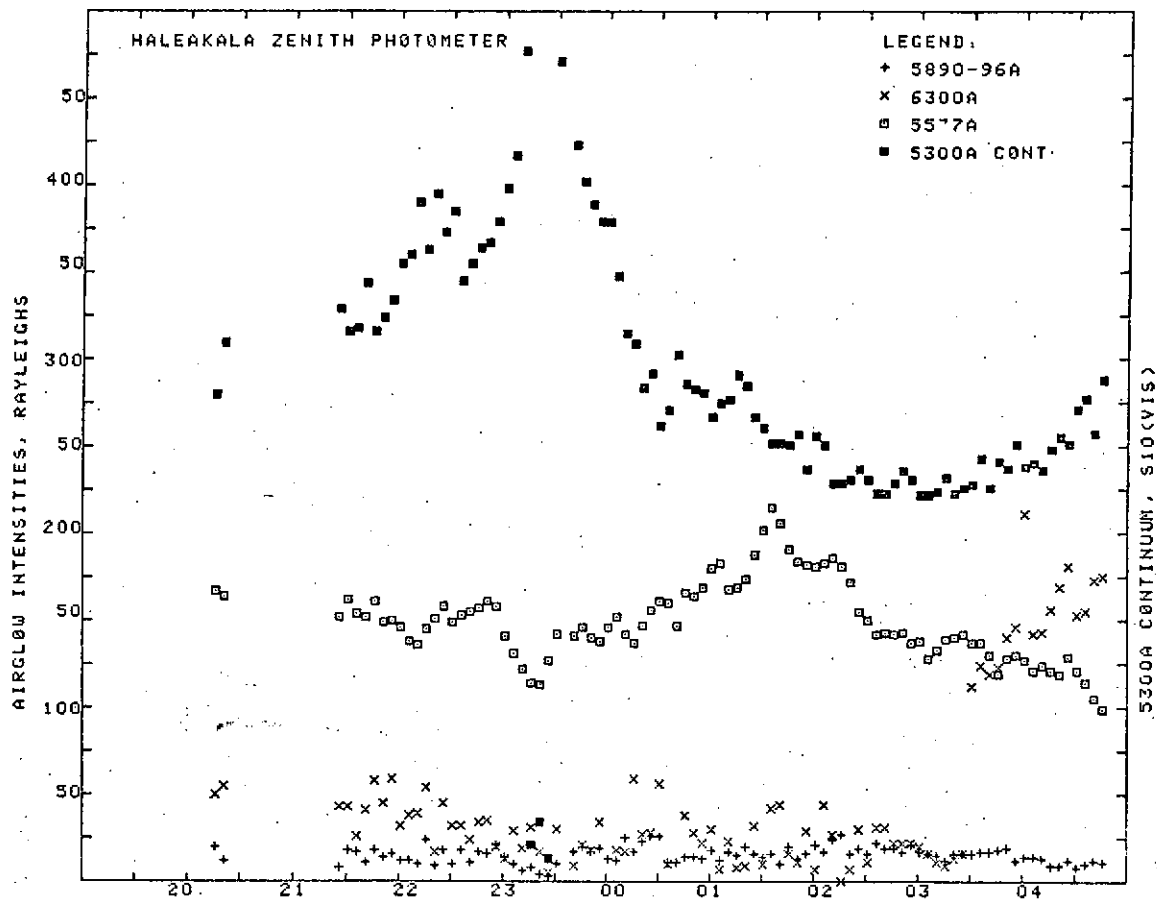


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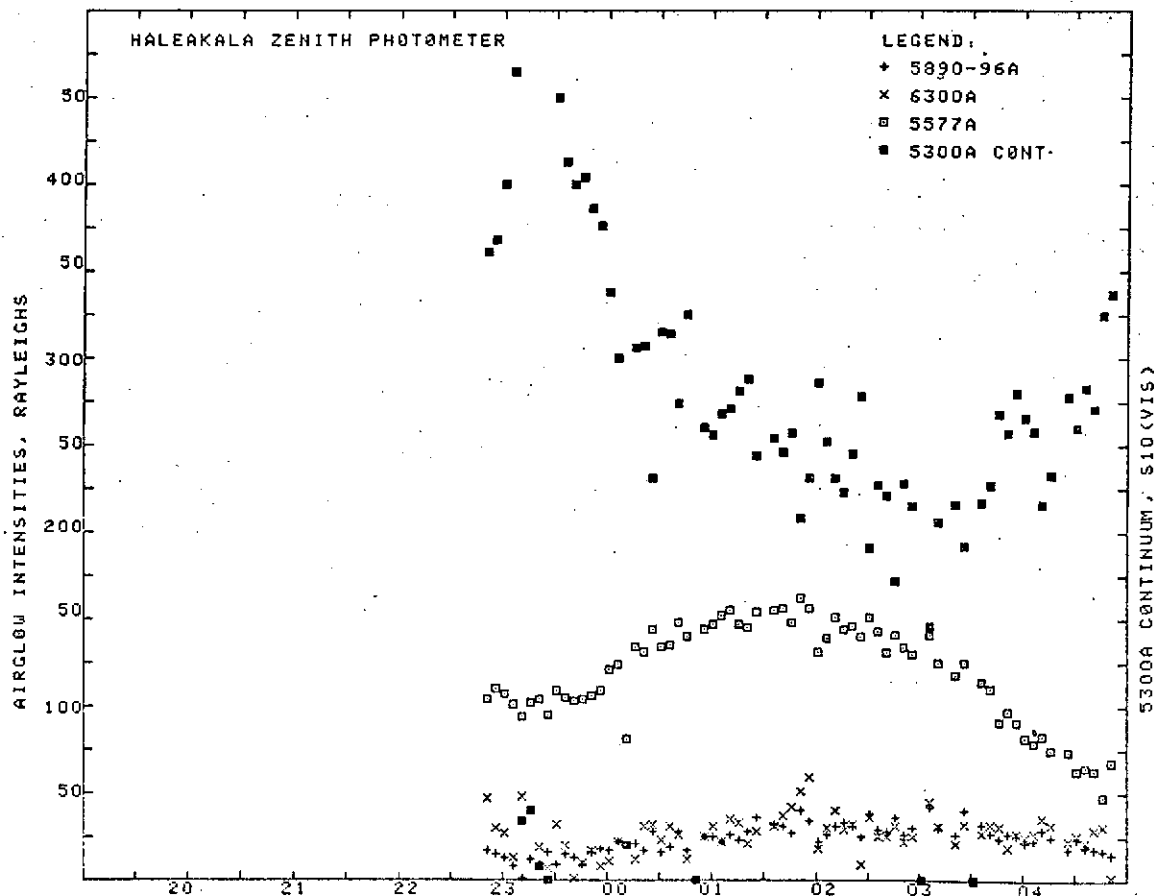




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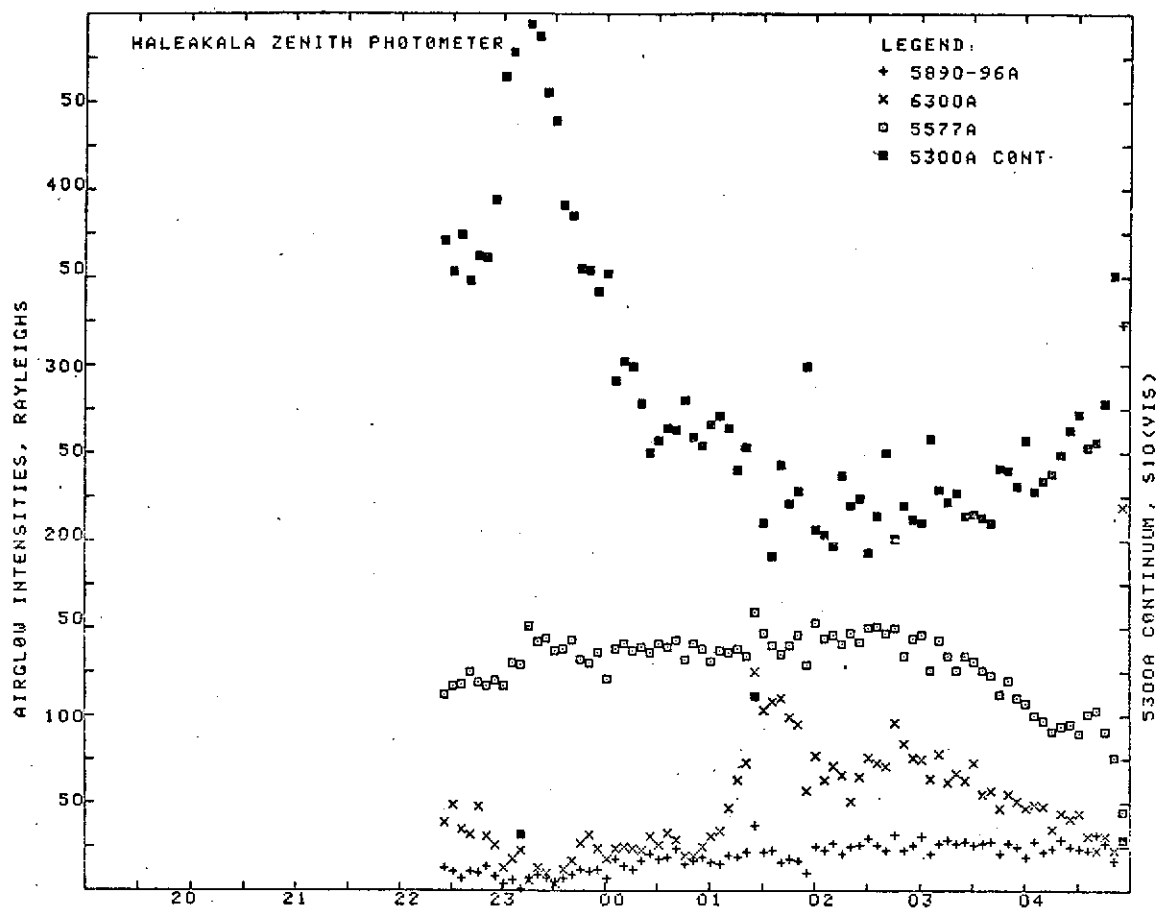


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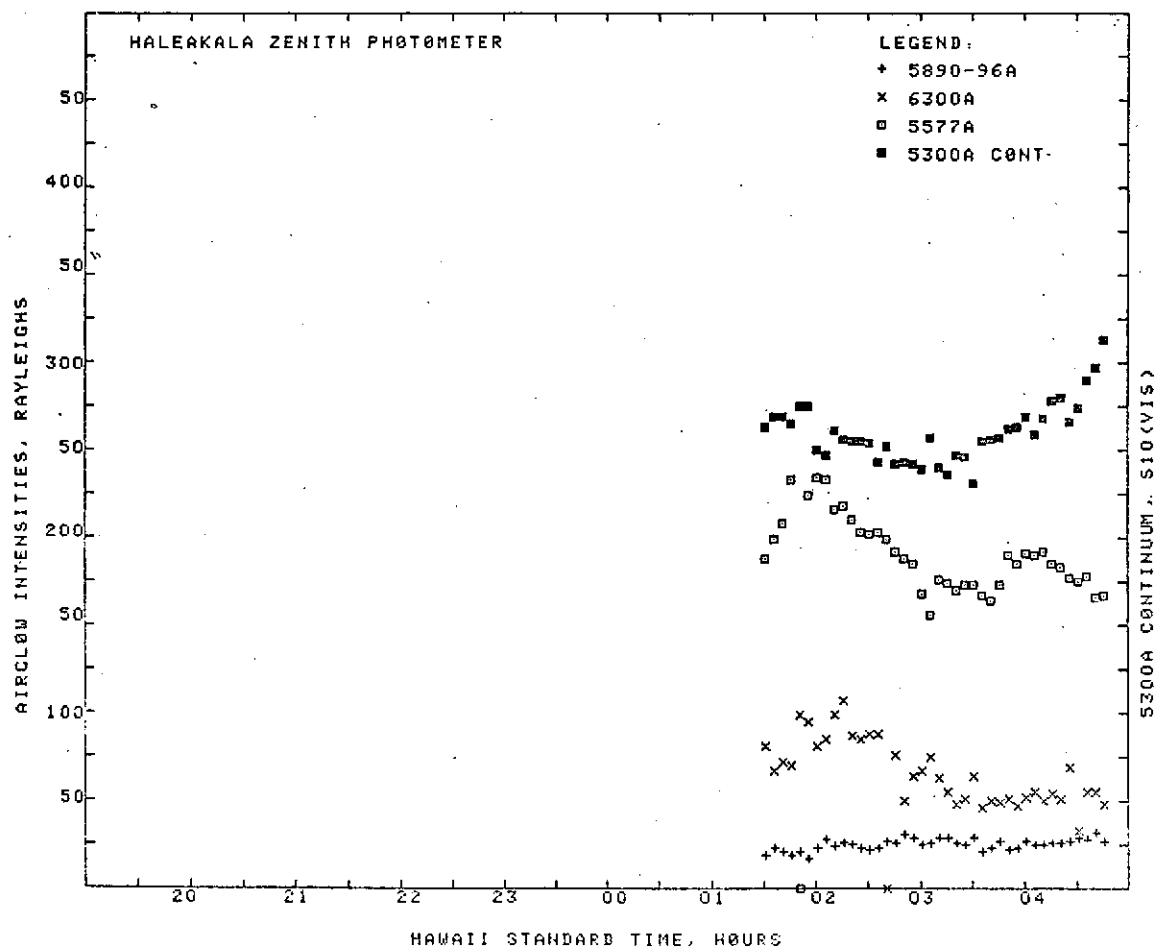


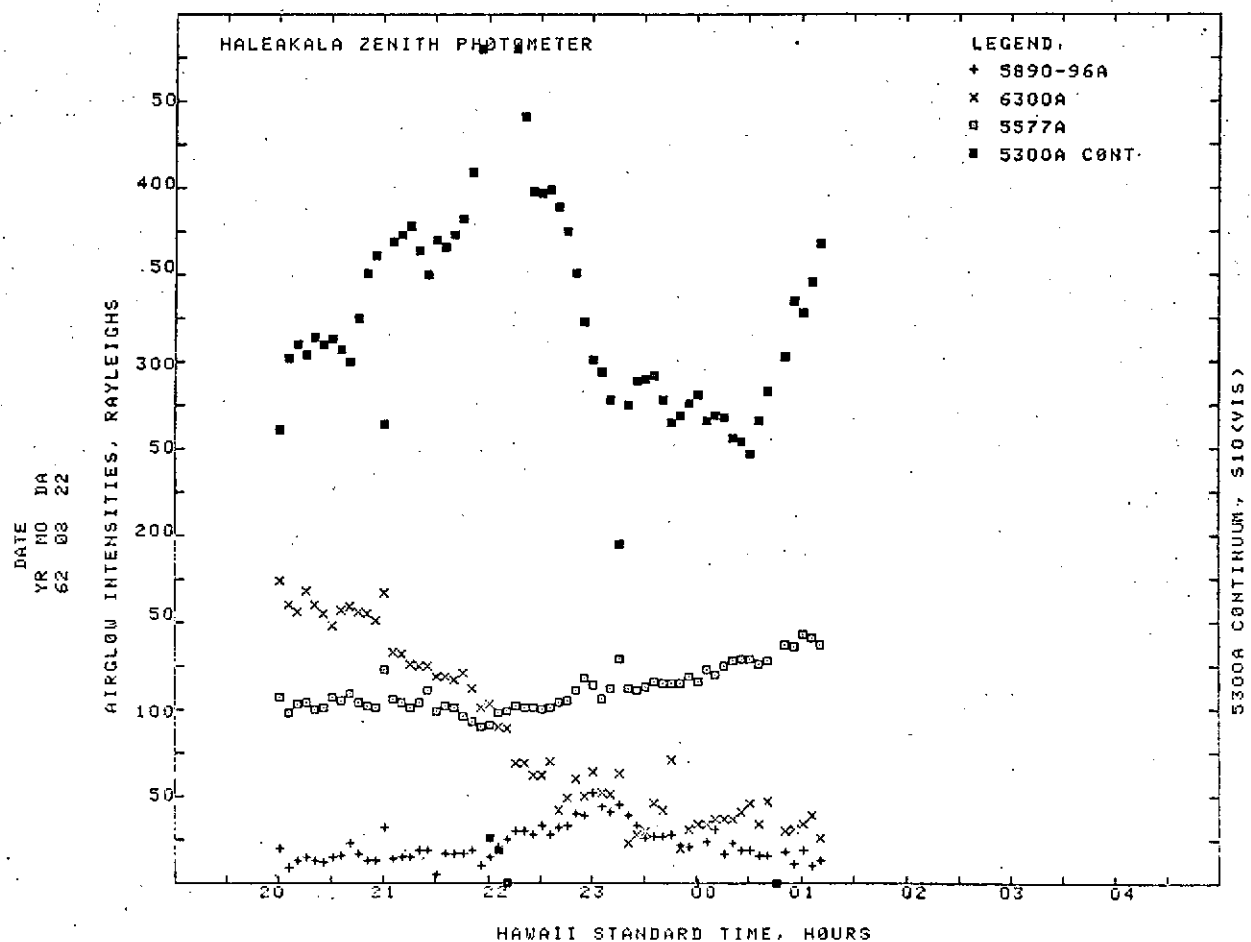
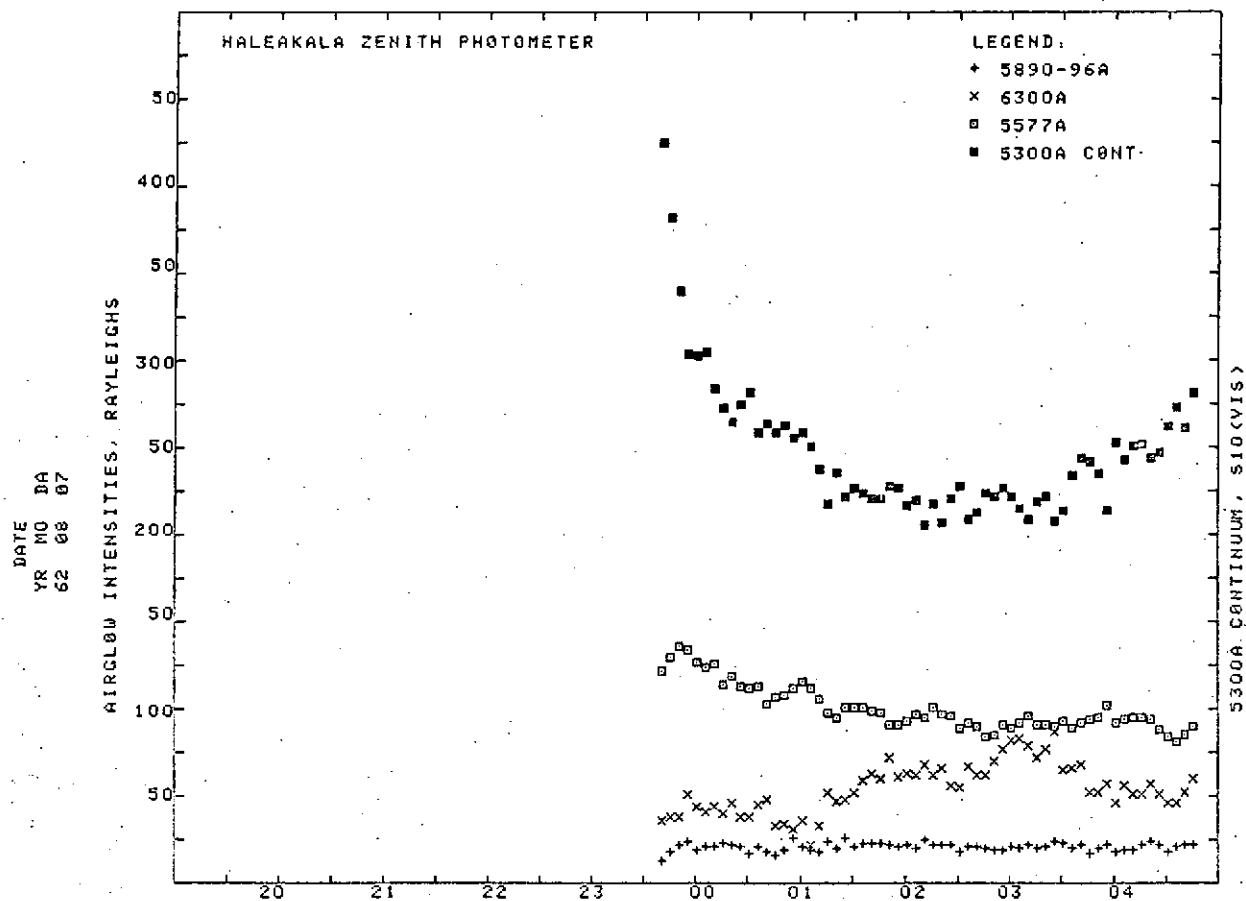
HAWAII STANDARD TIME, HOURS.

DATE  
YR MO DA  
62 08 05



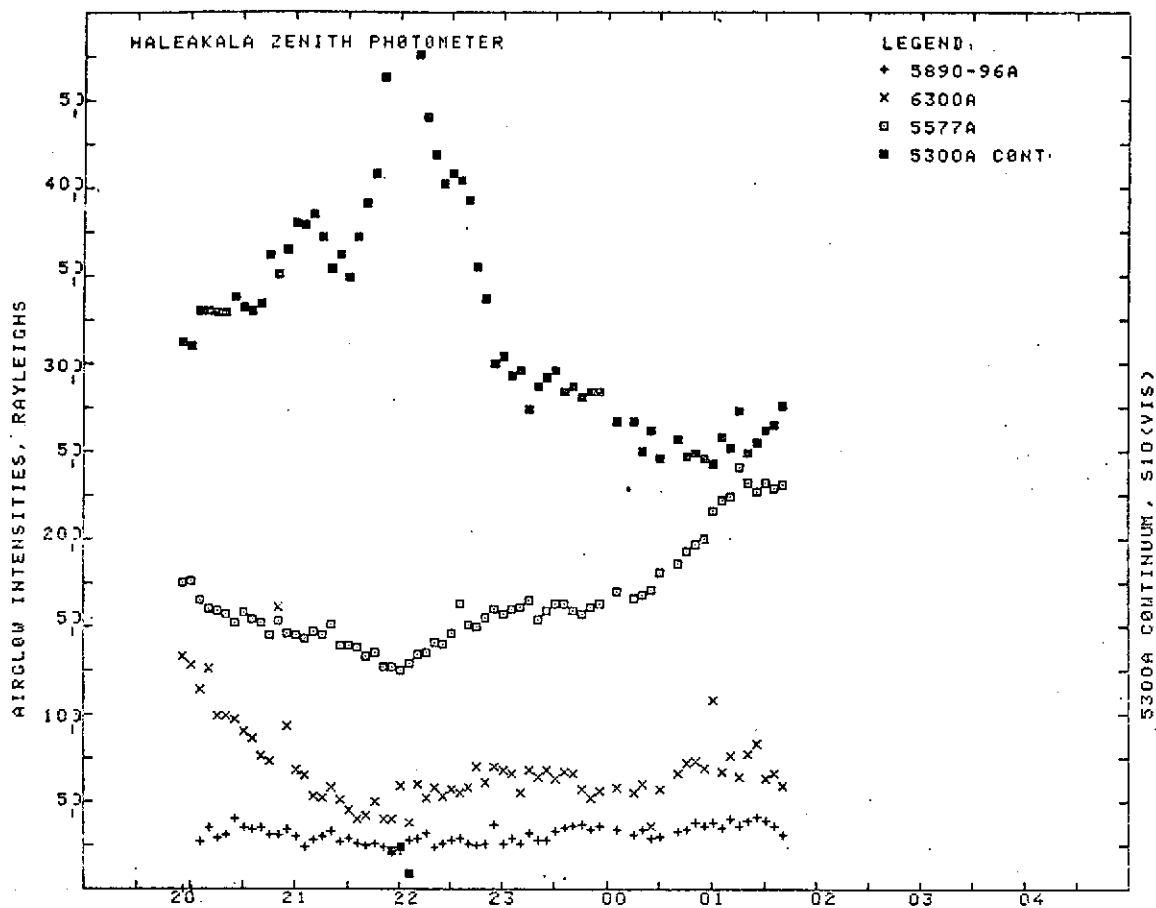
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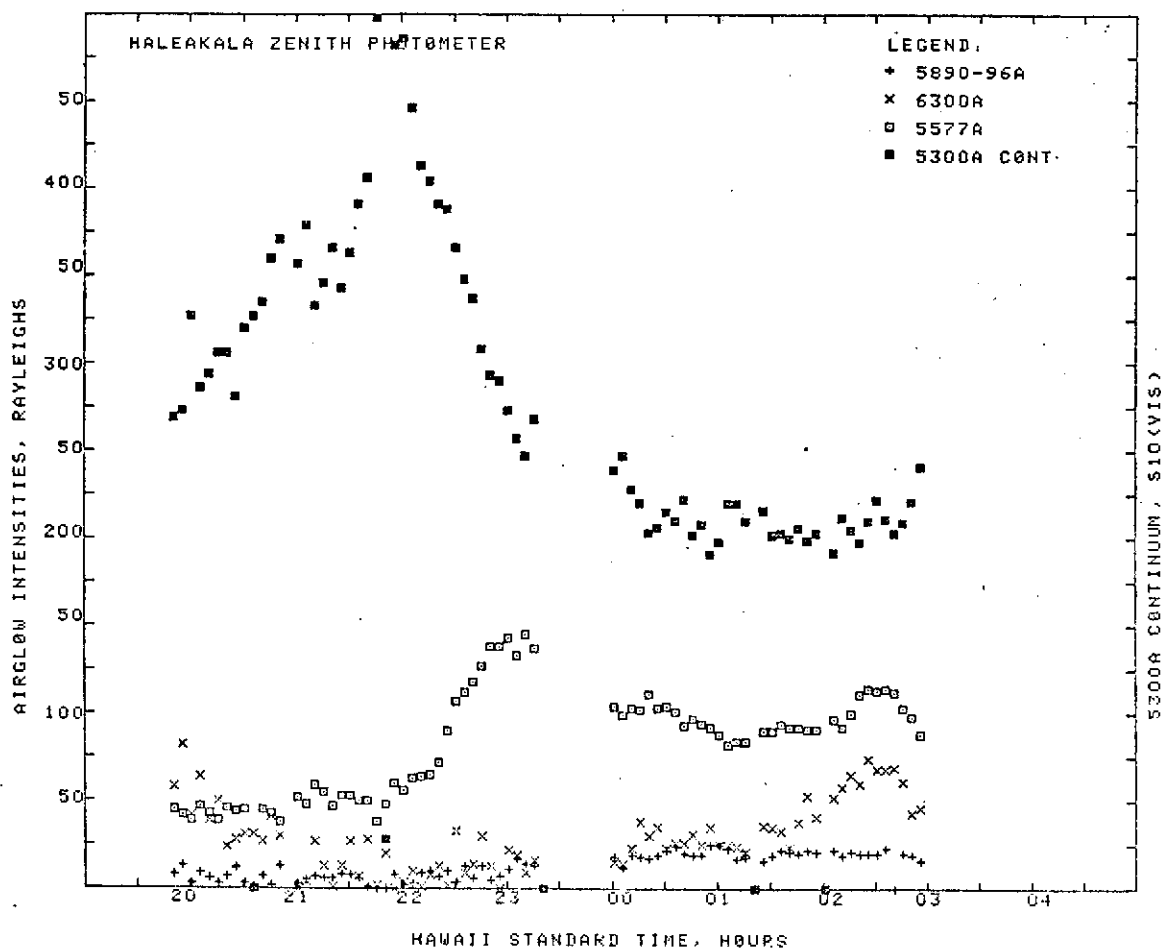




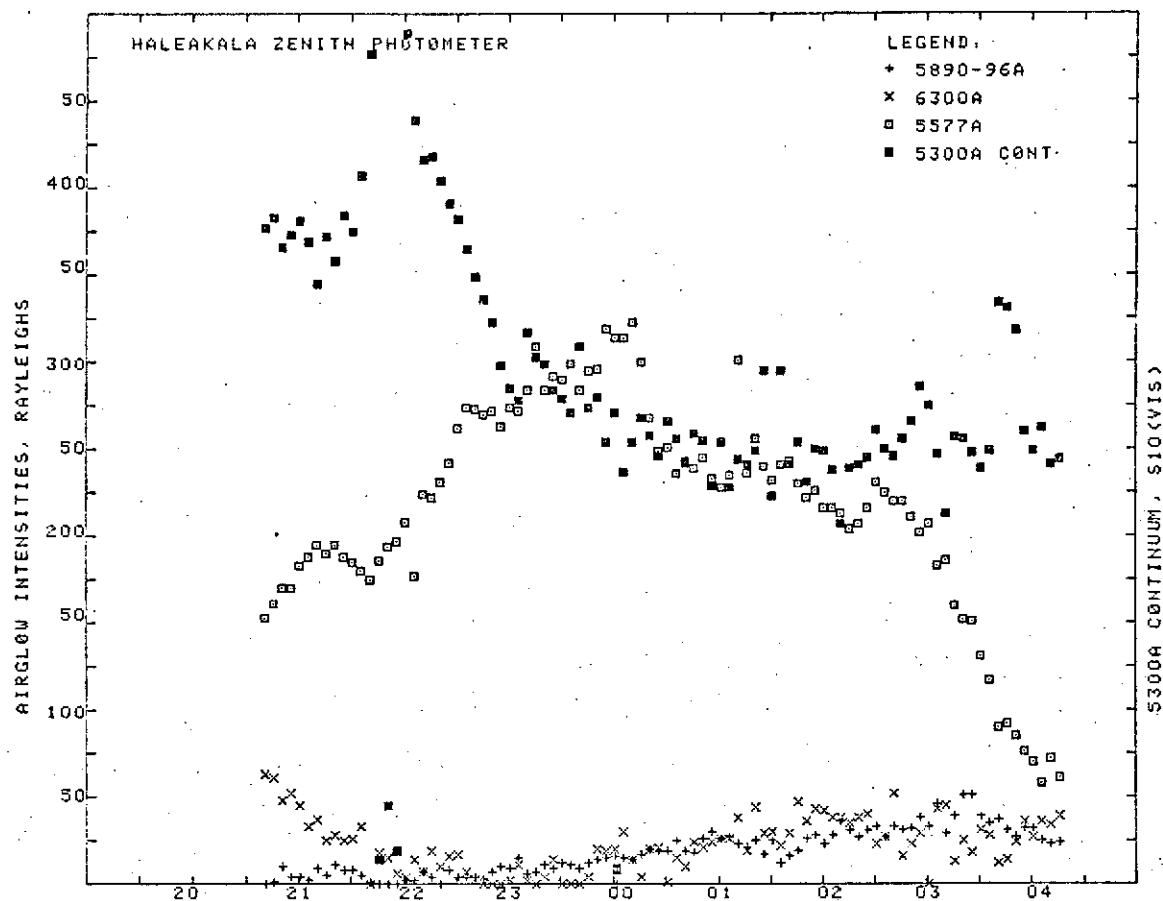
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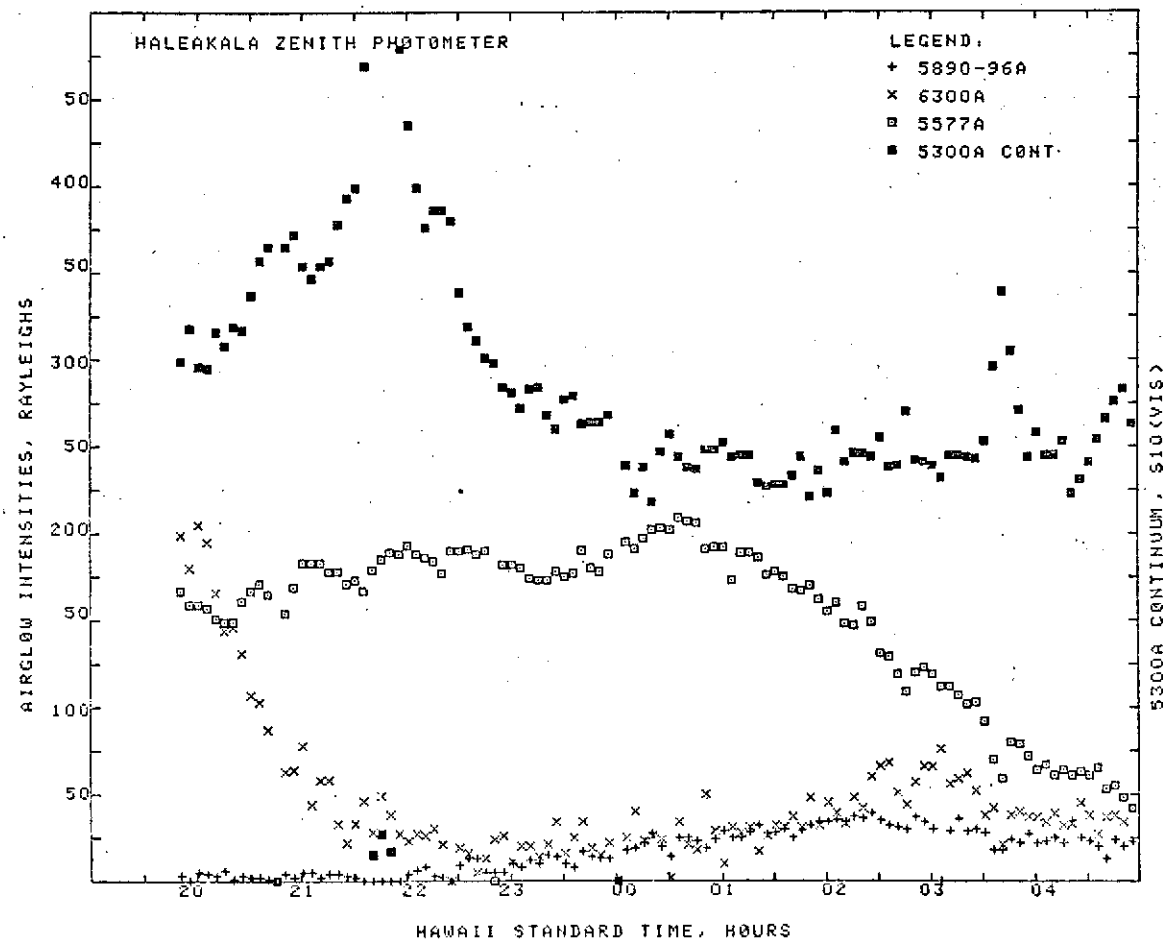
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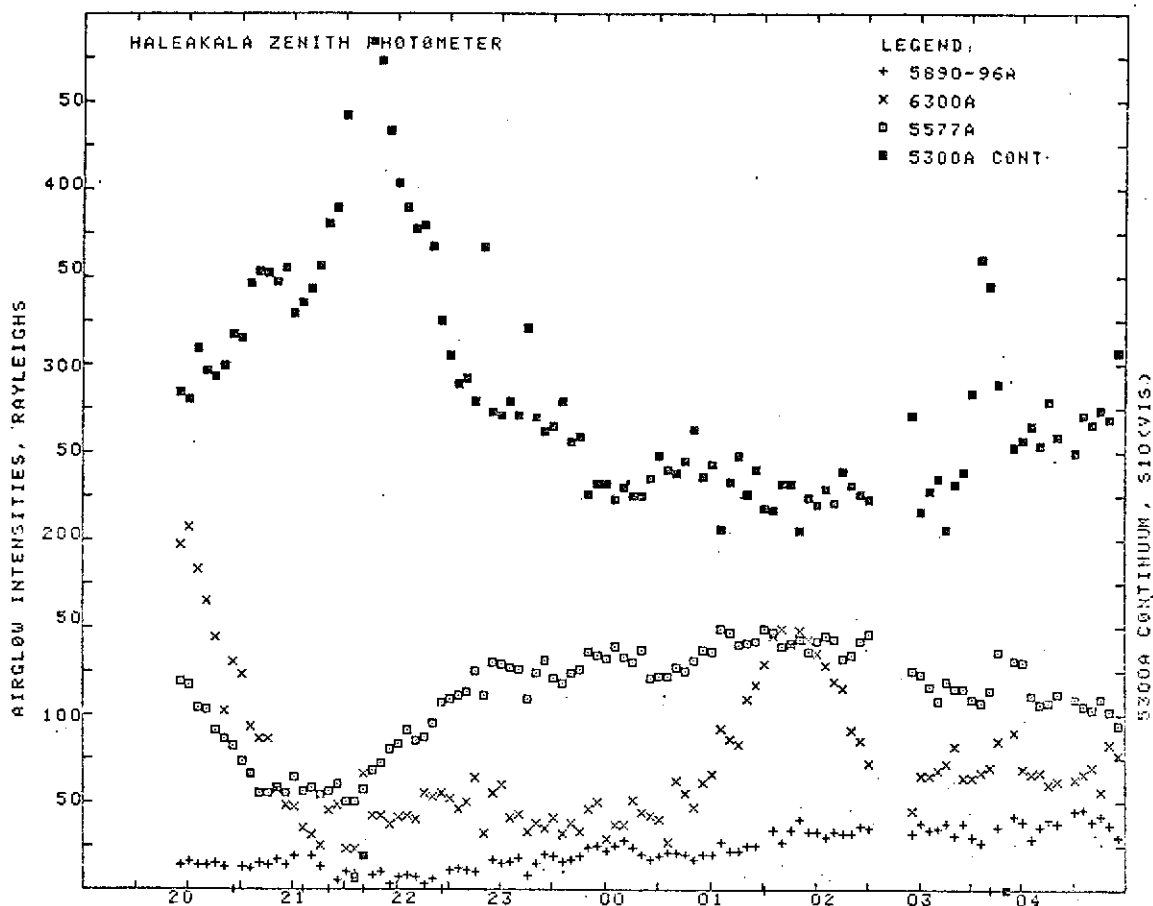
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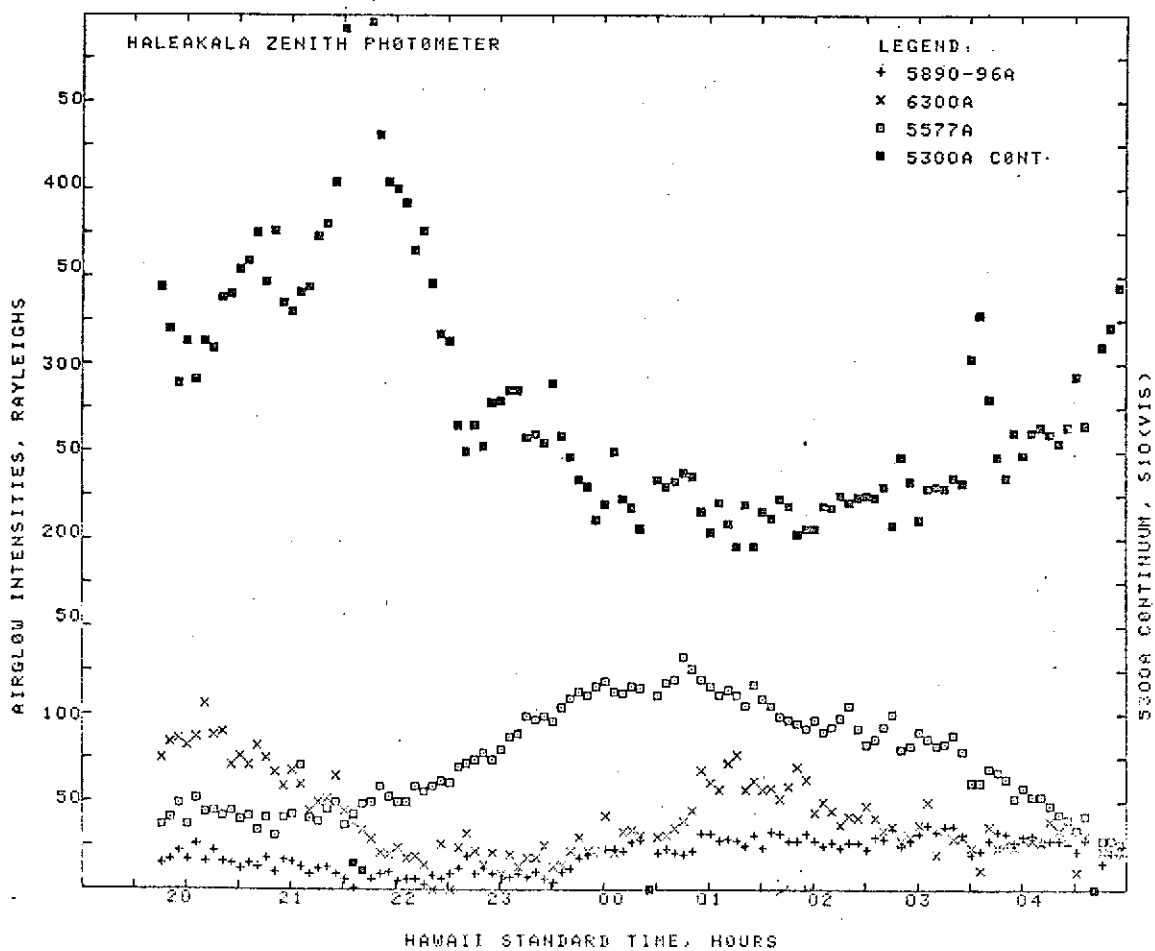
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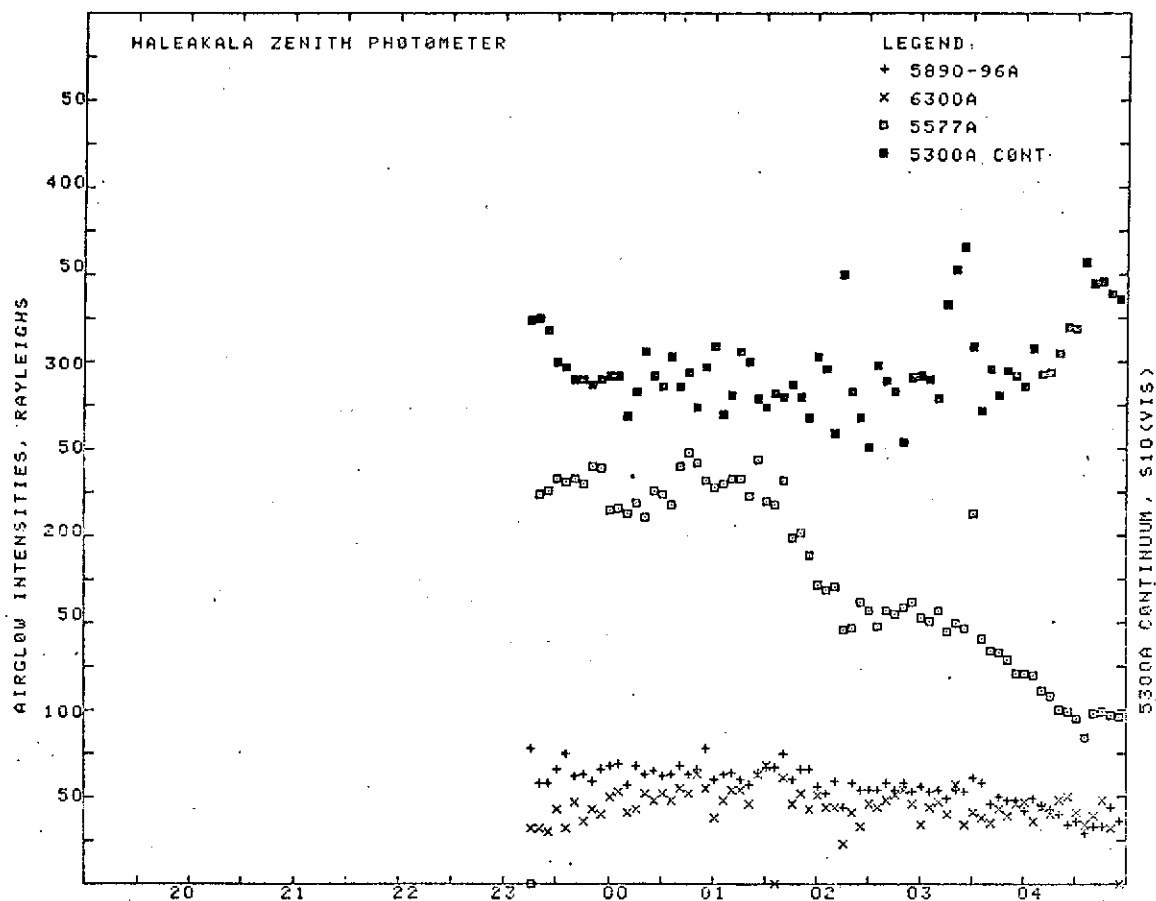
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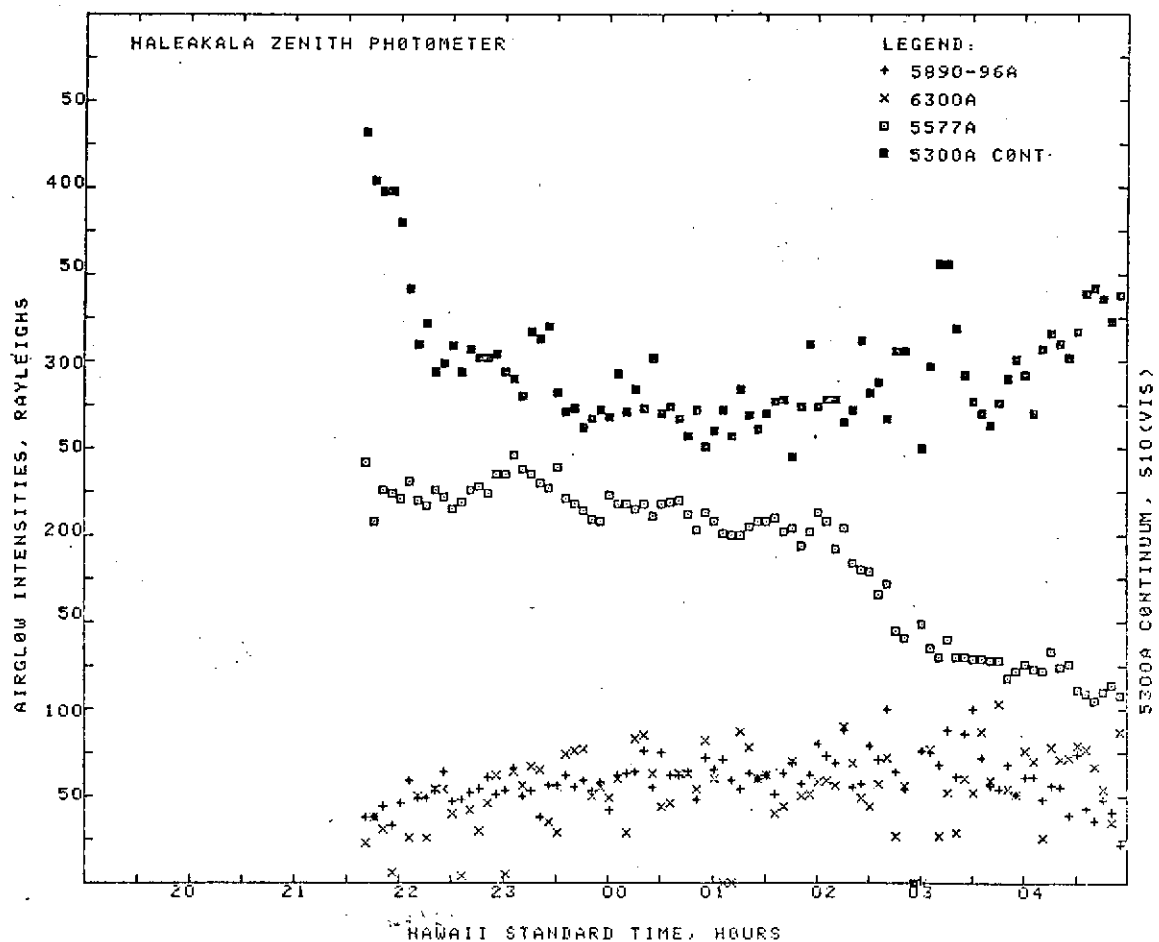
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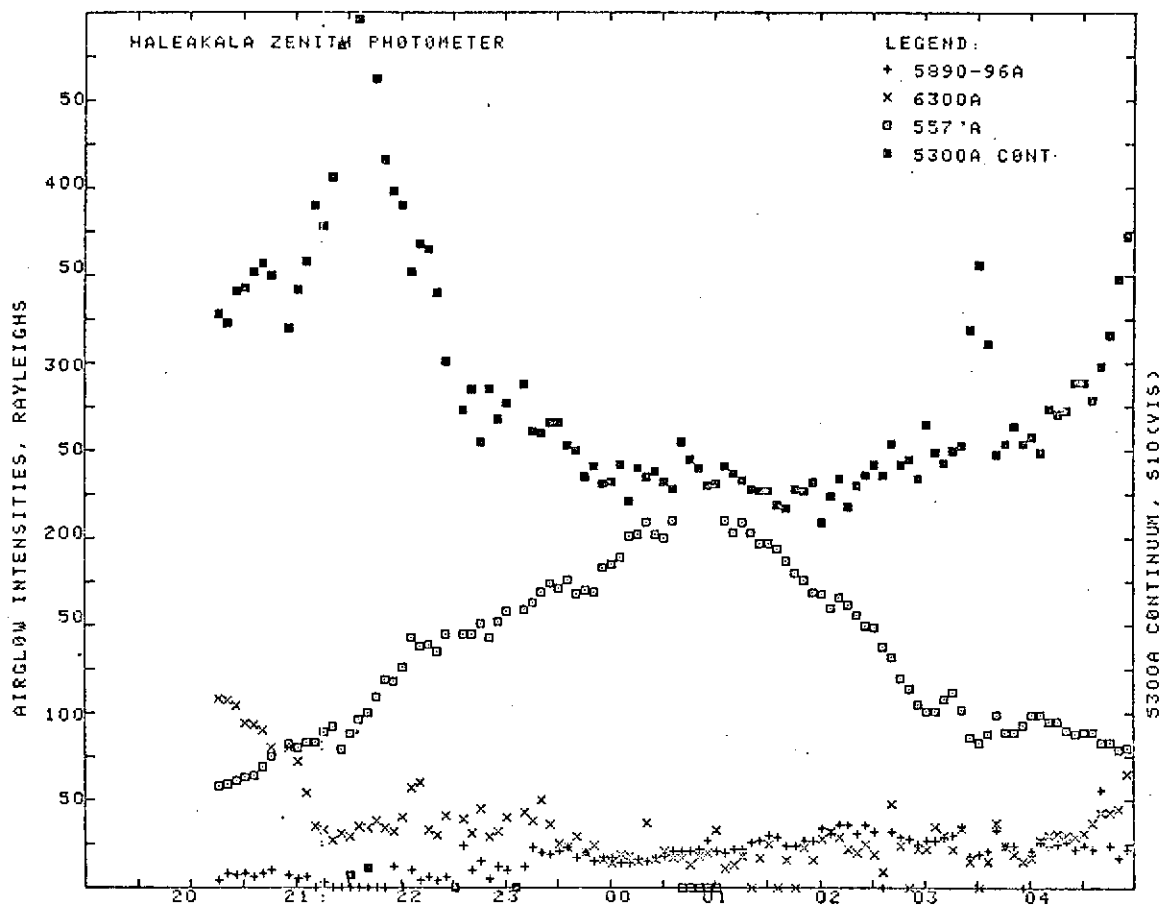
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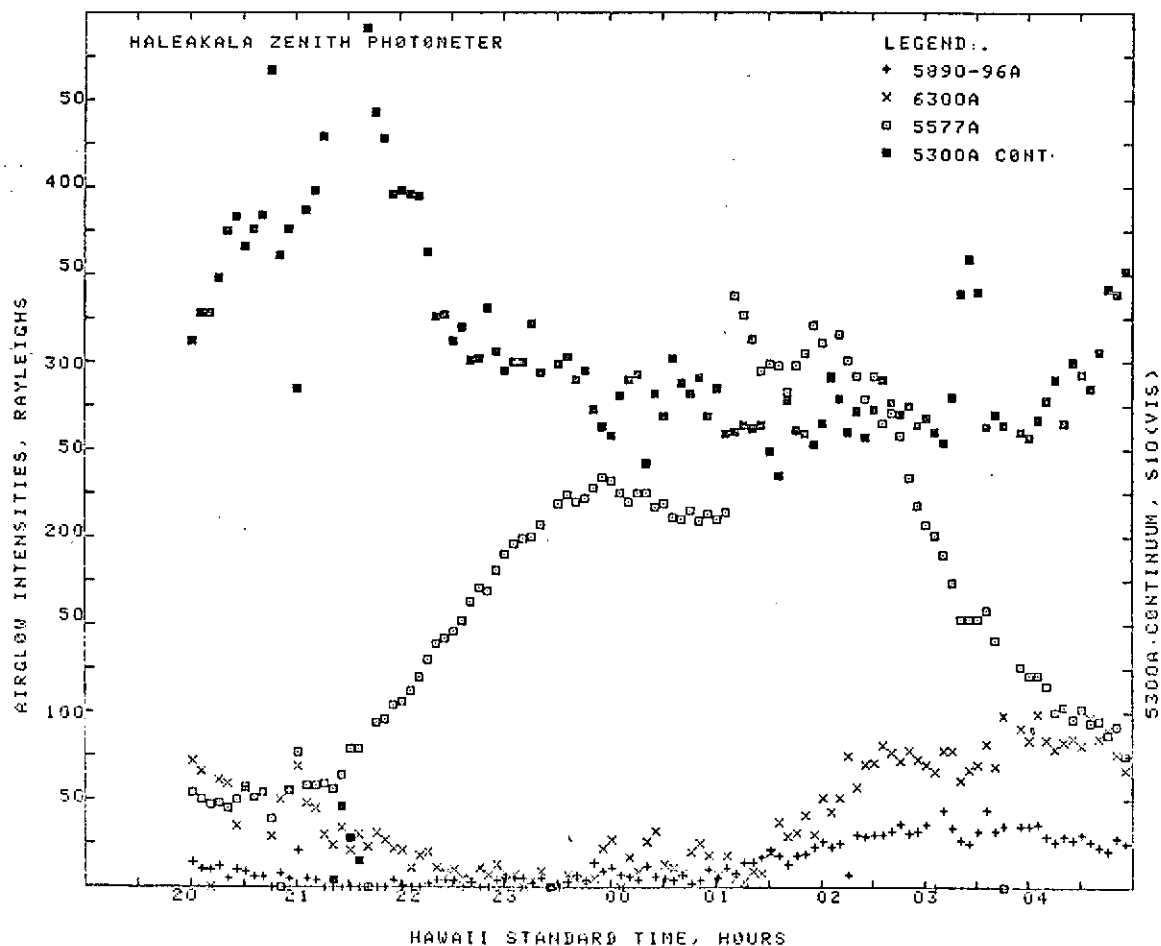
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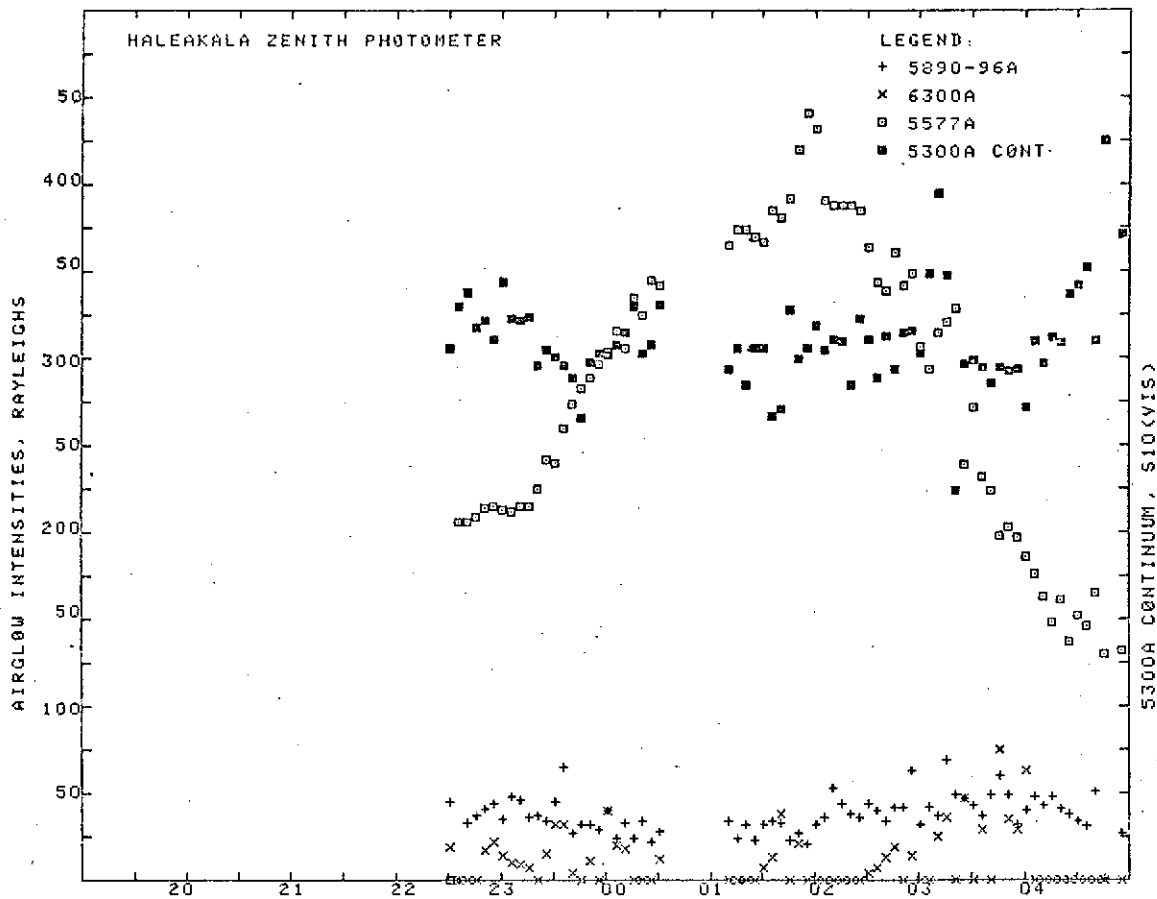
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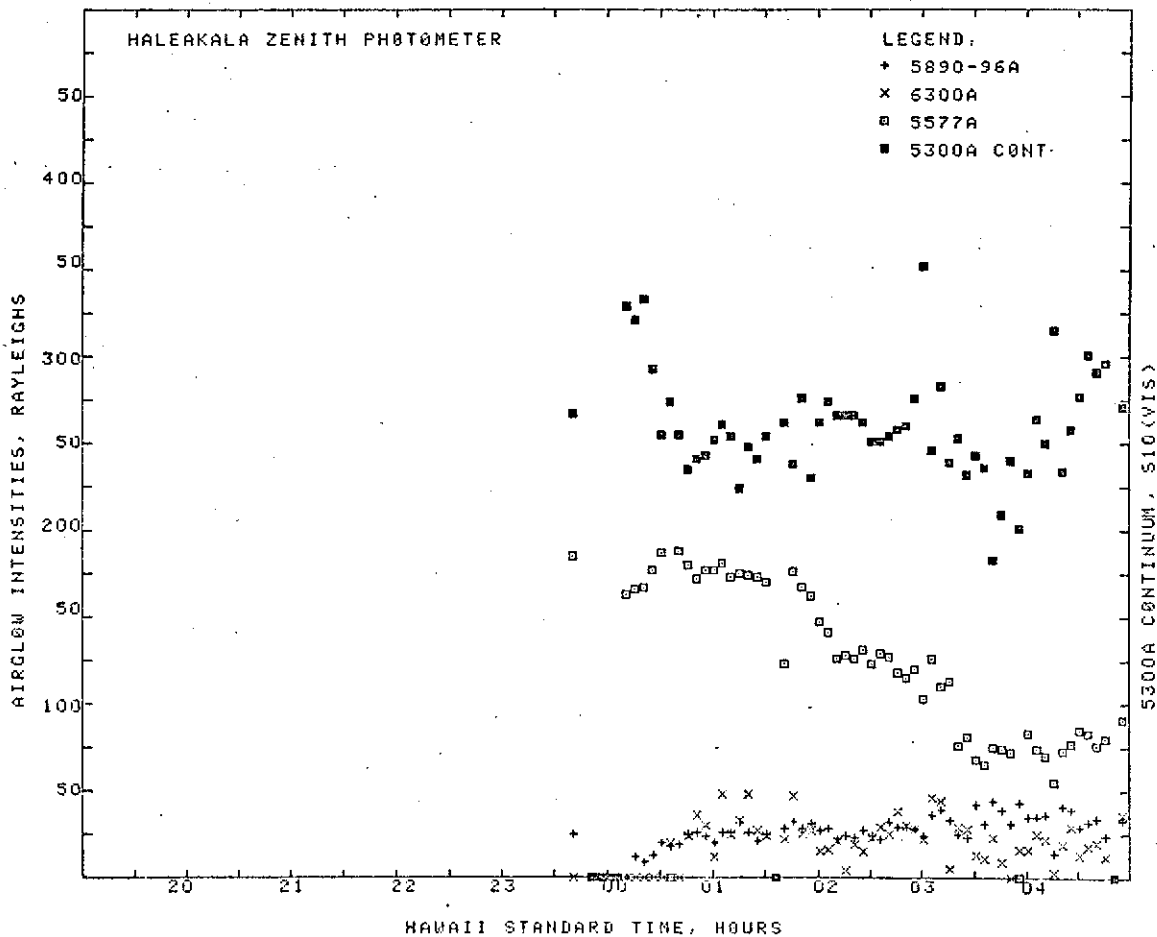
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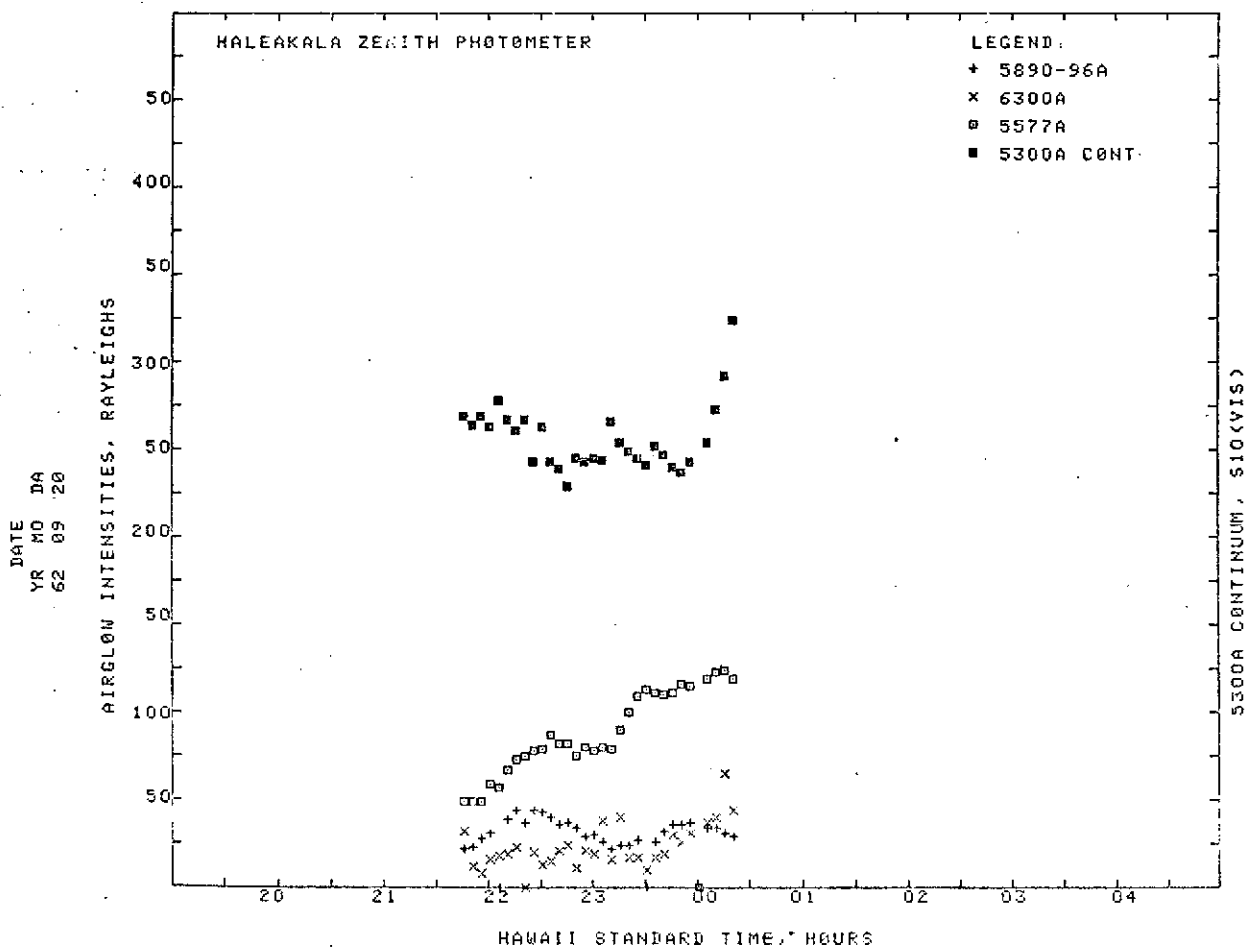
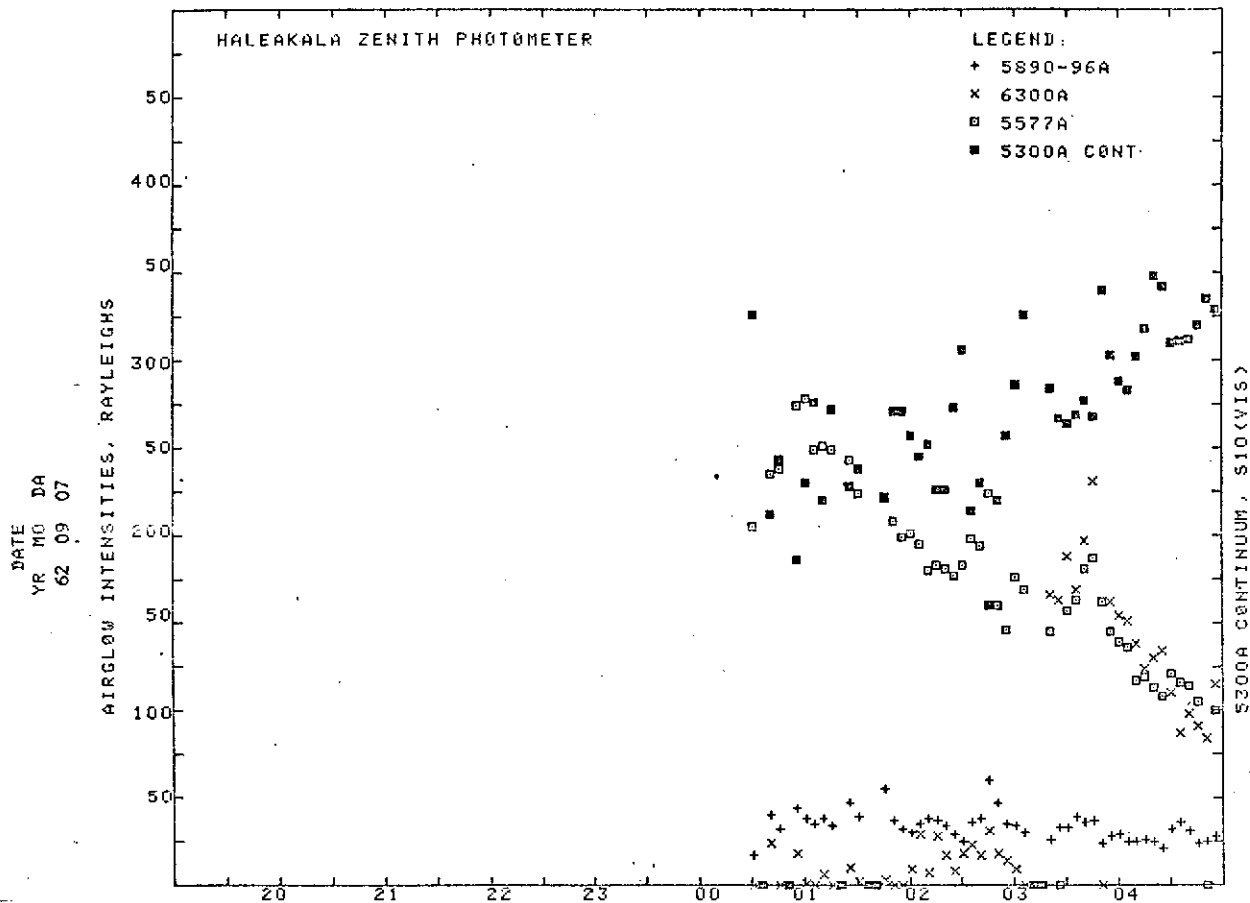


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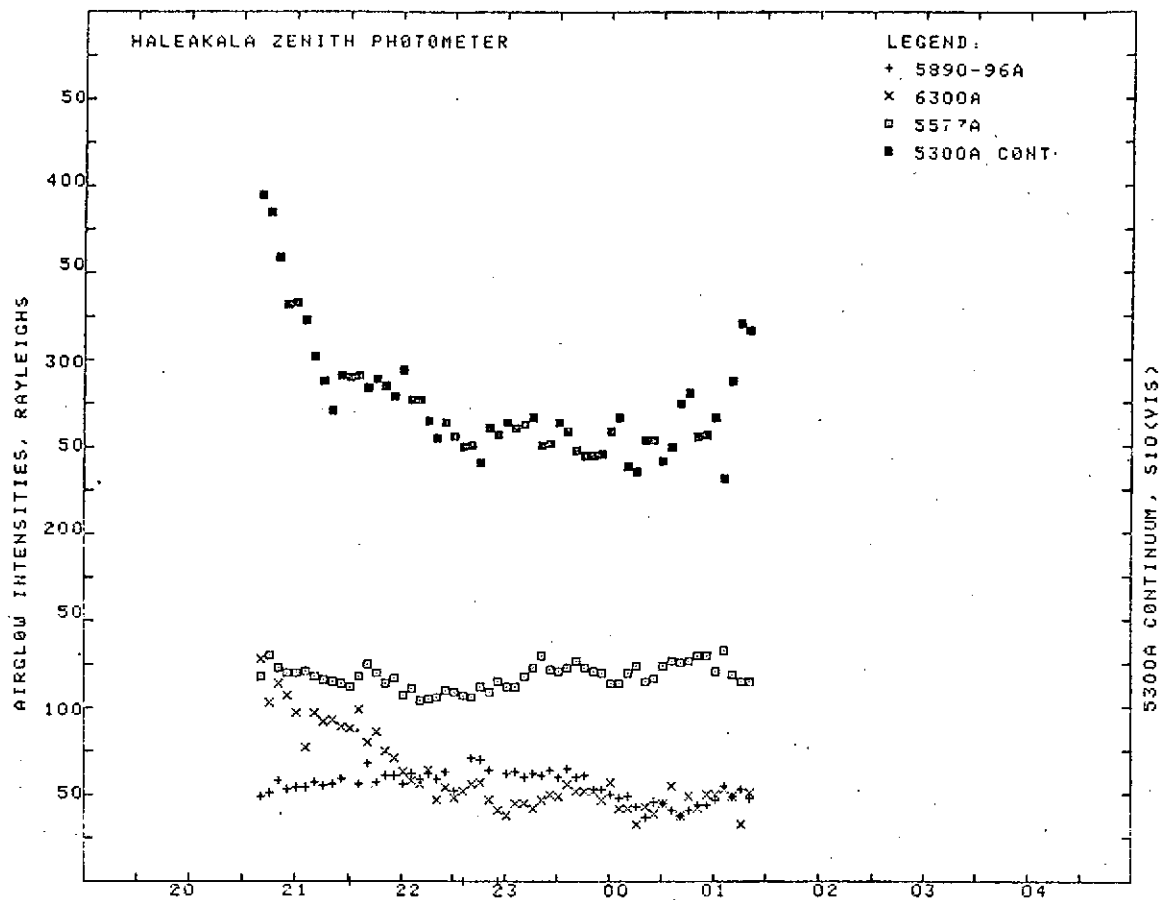


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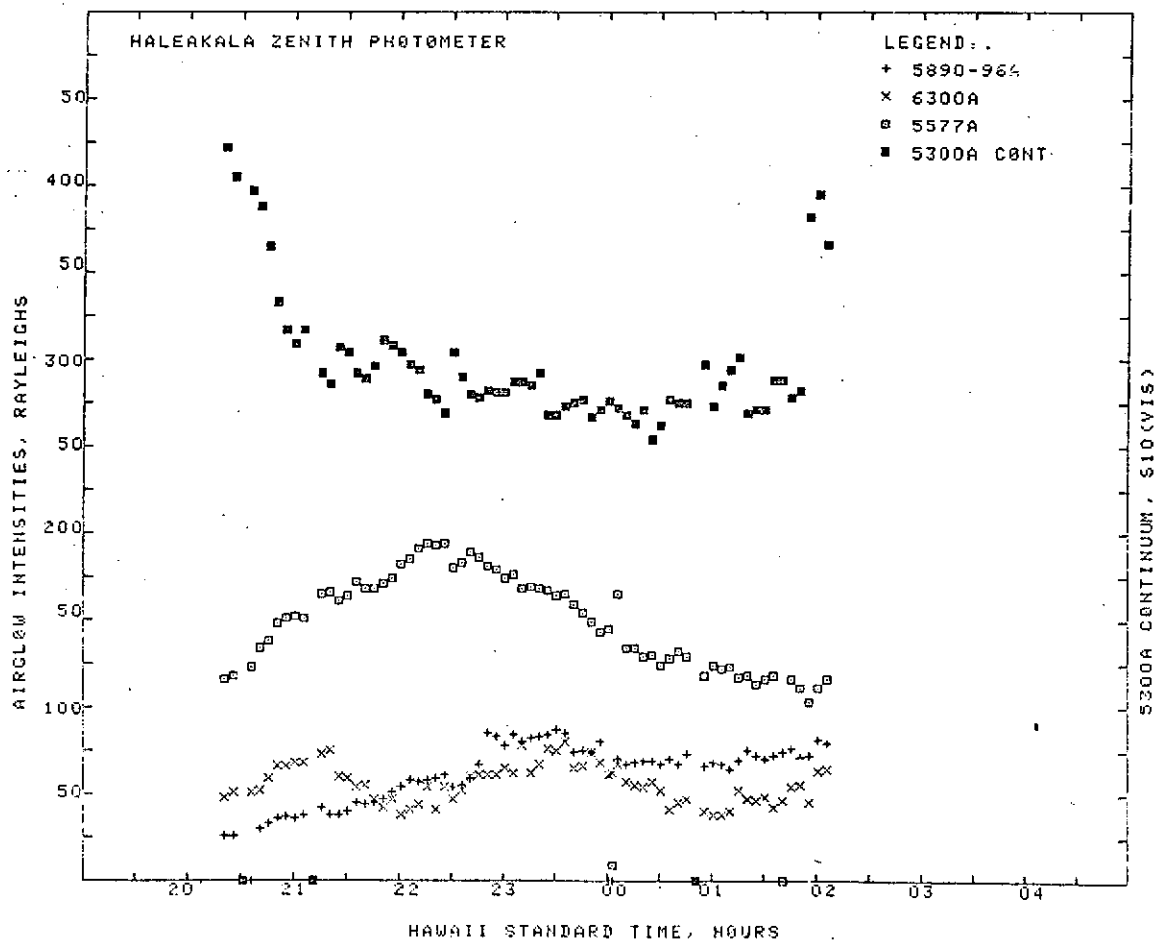




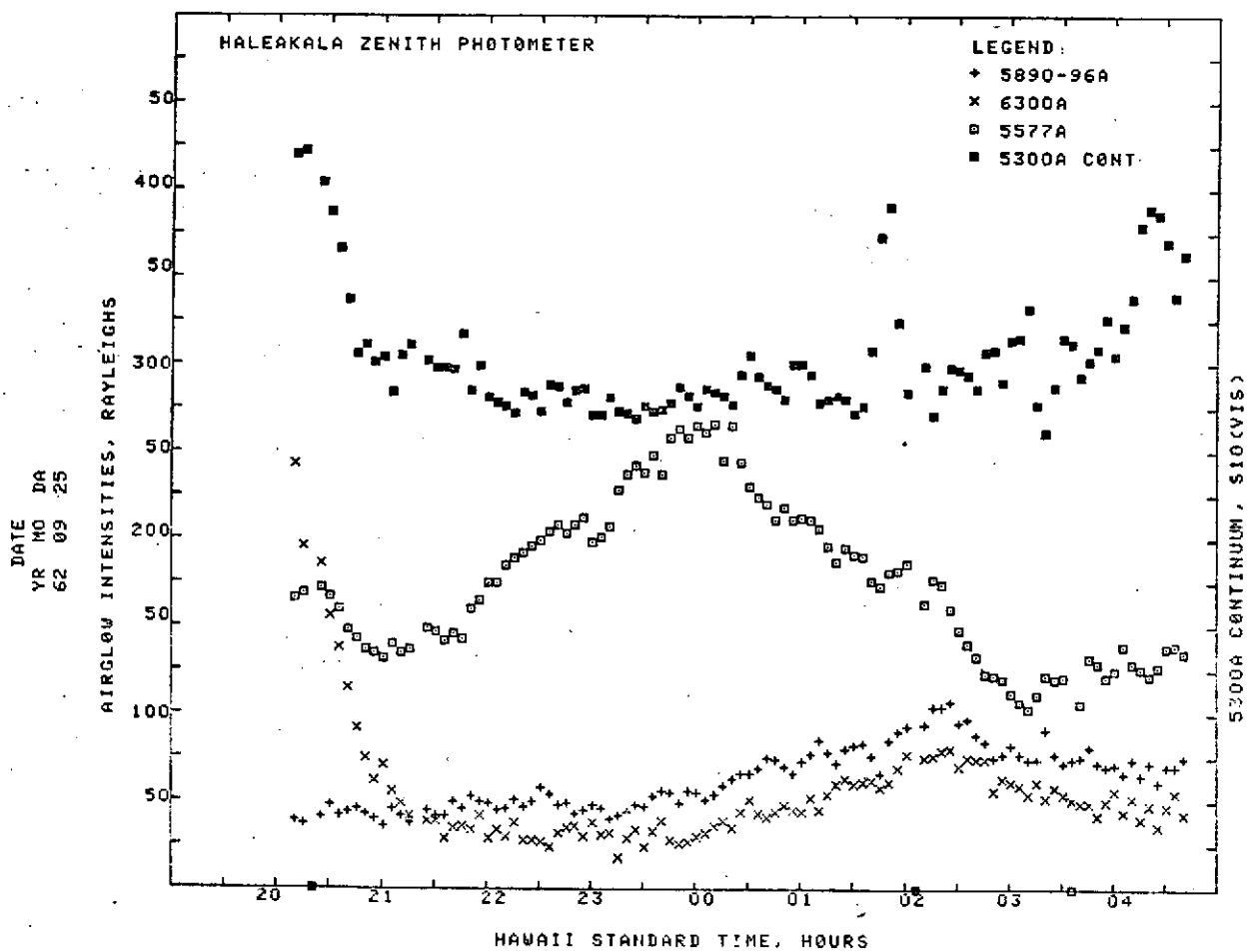
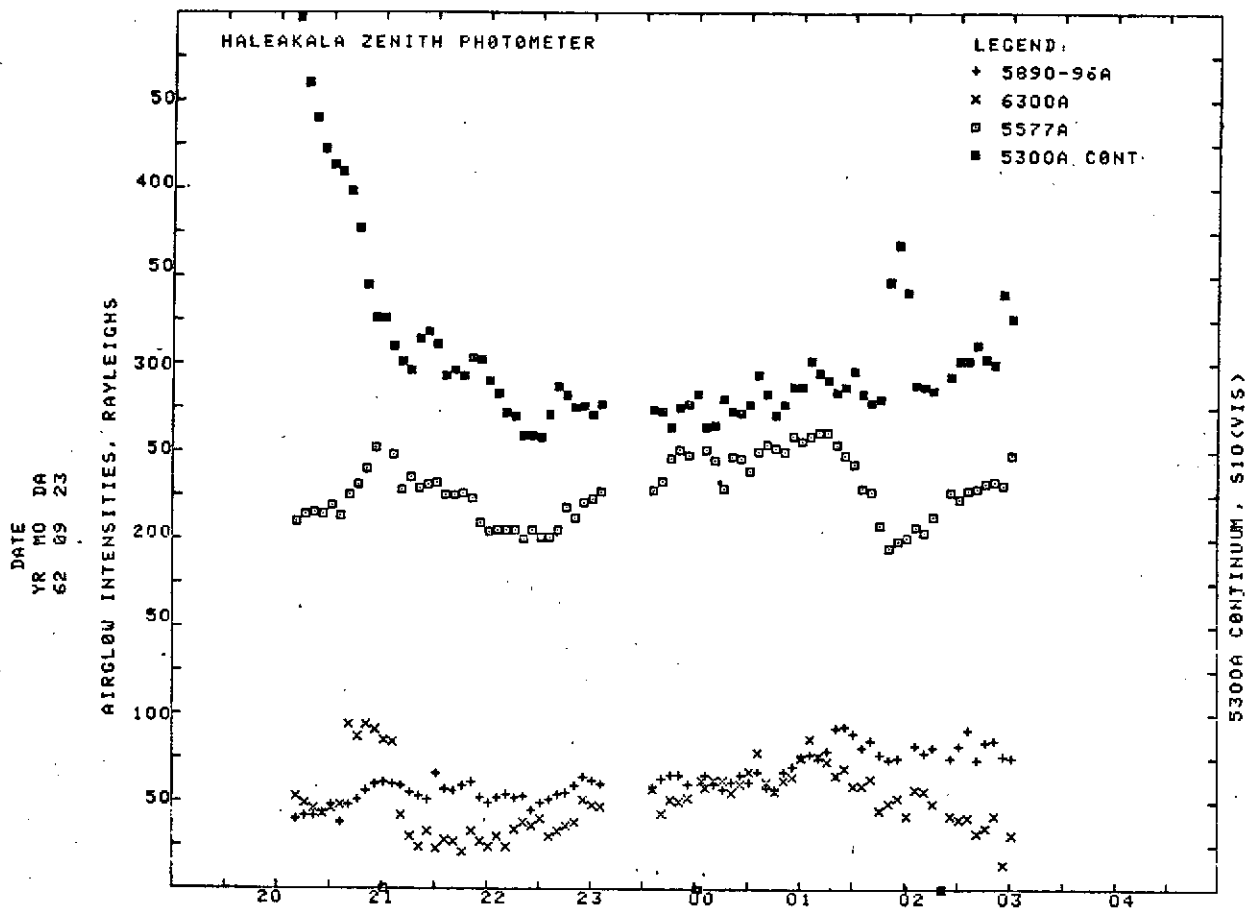
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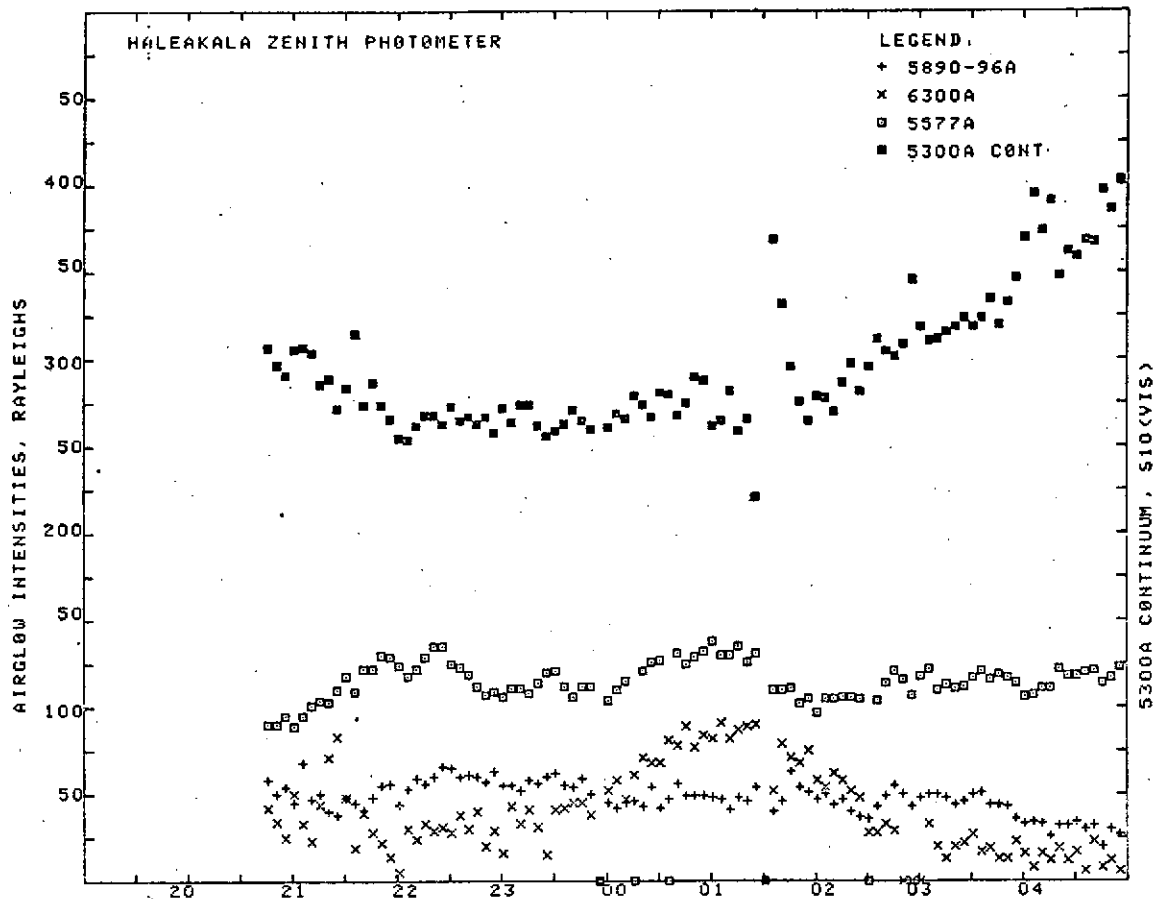
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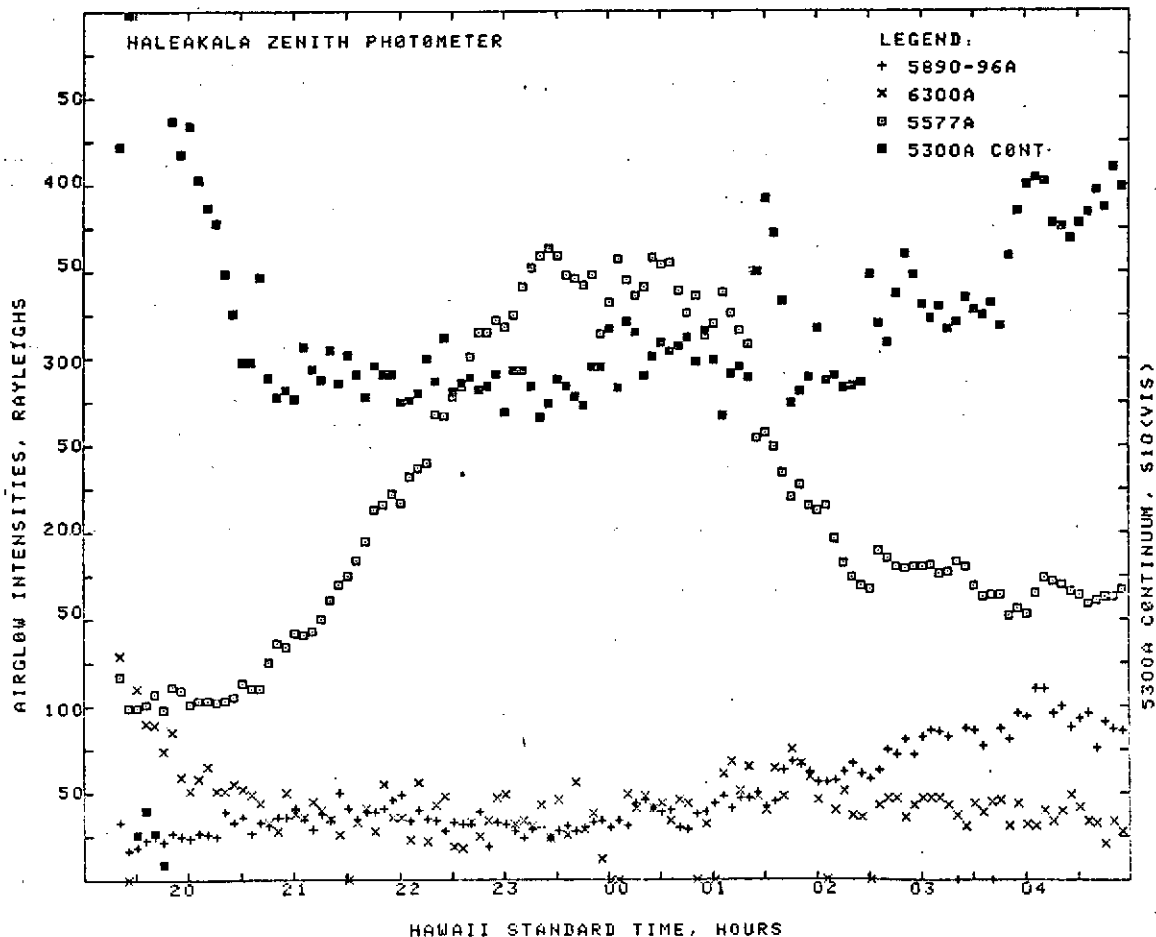


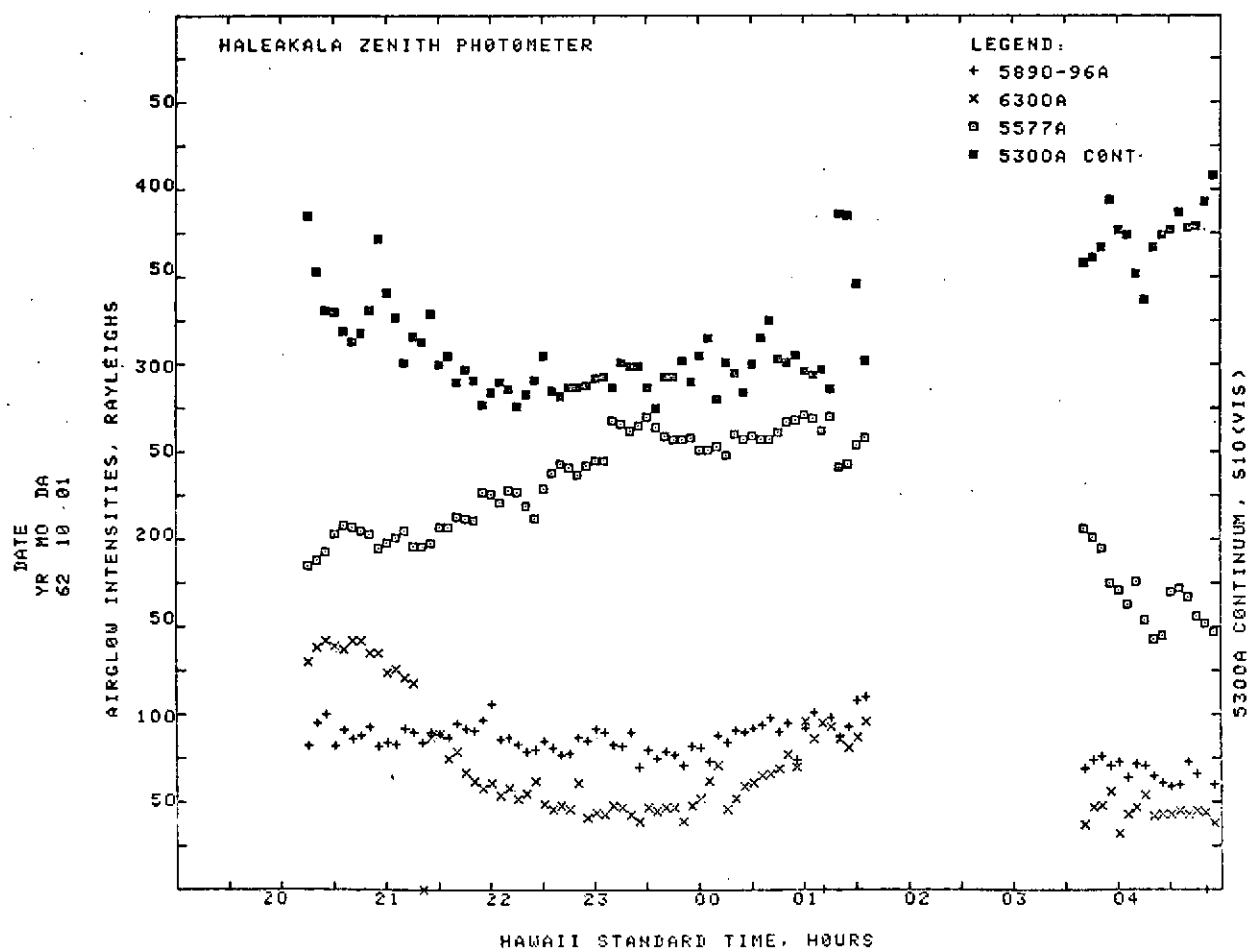
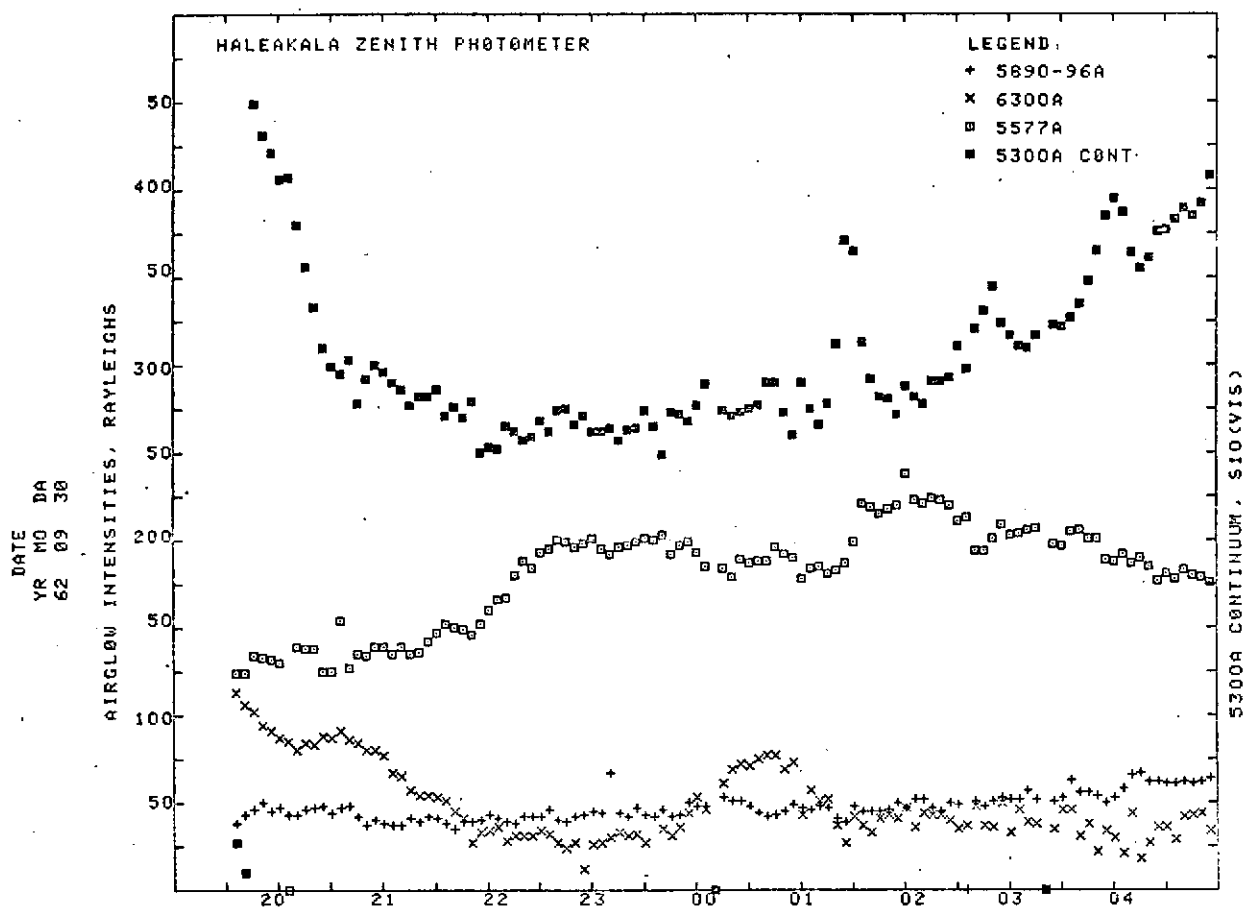


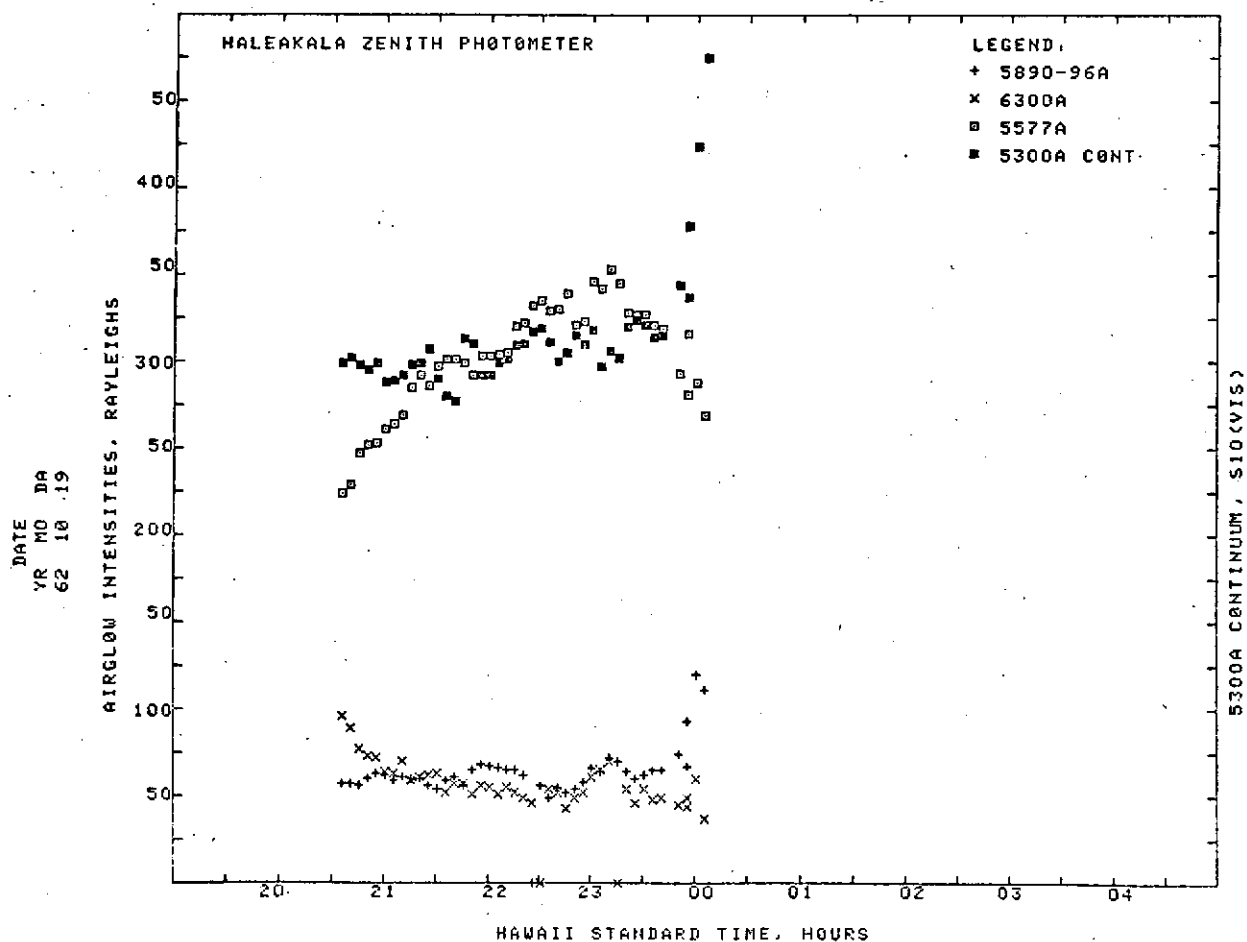
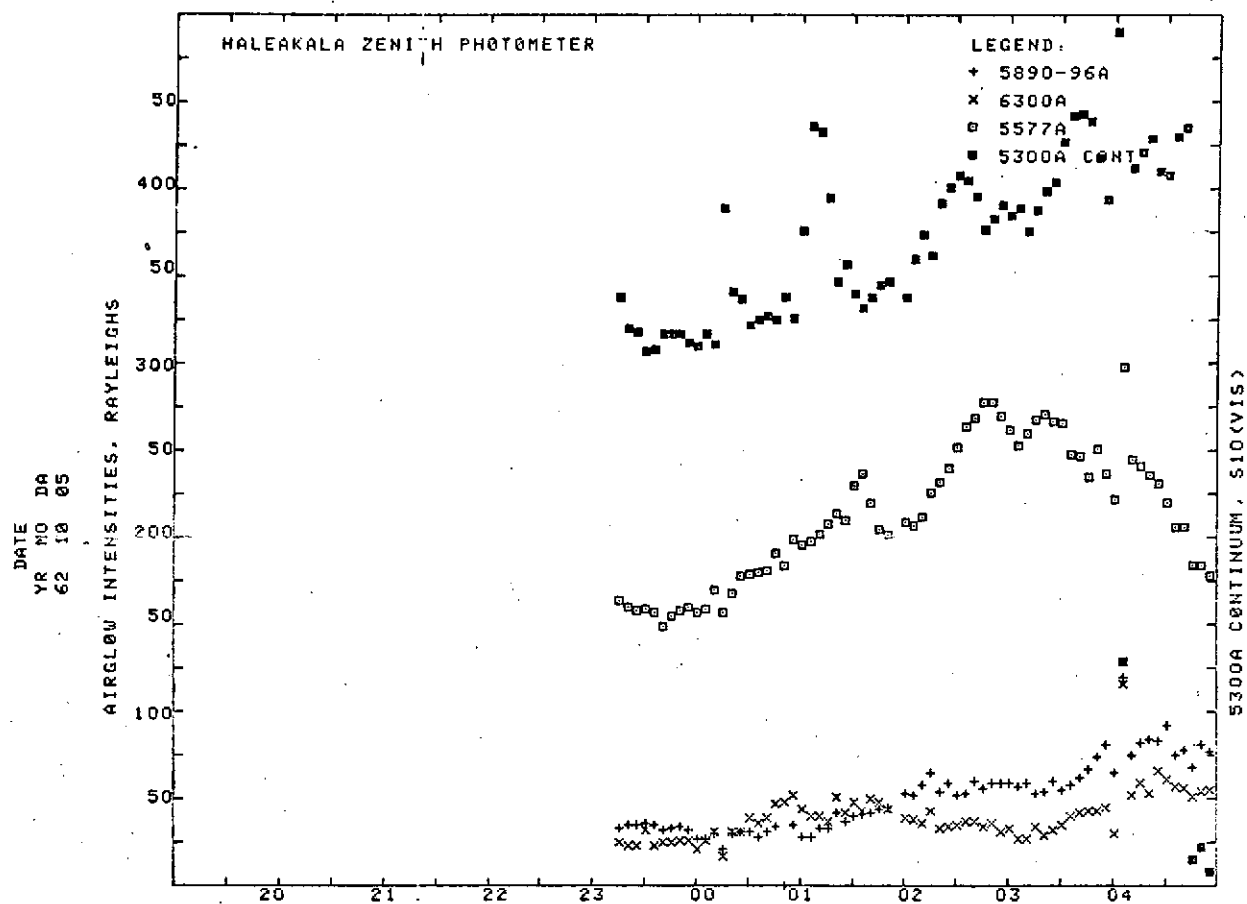
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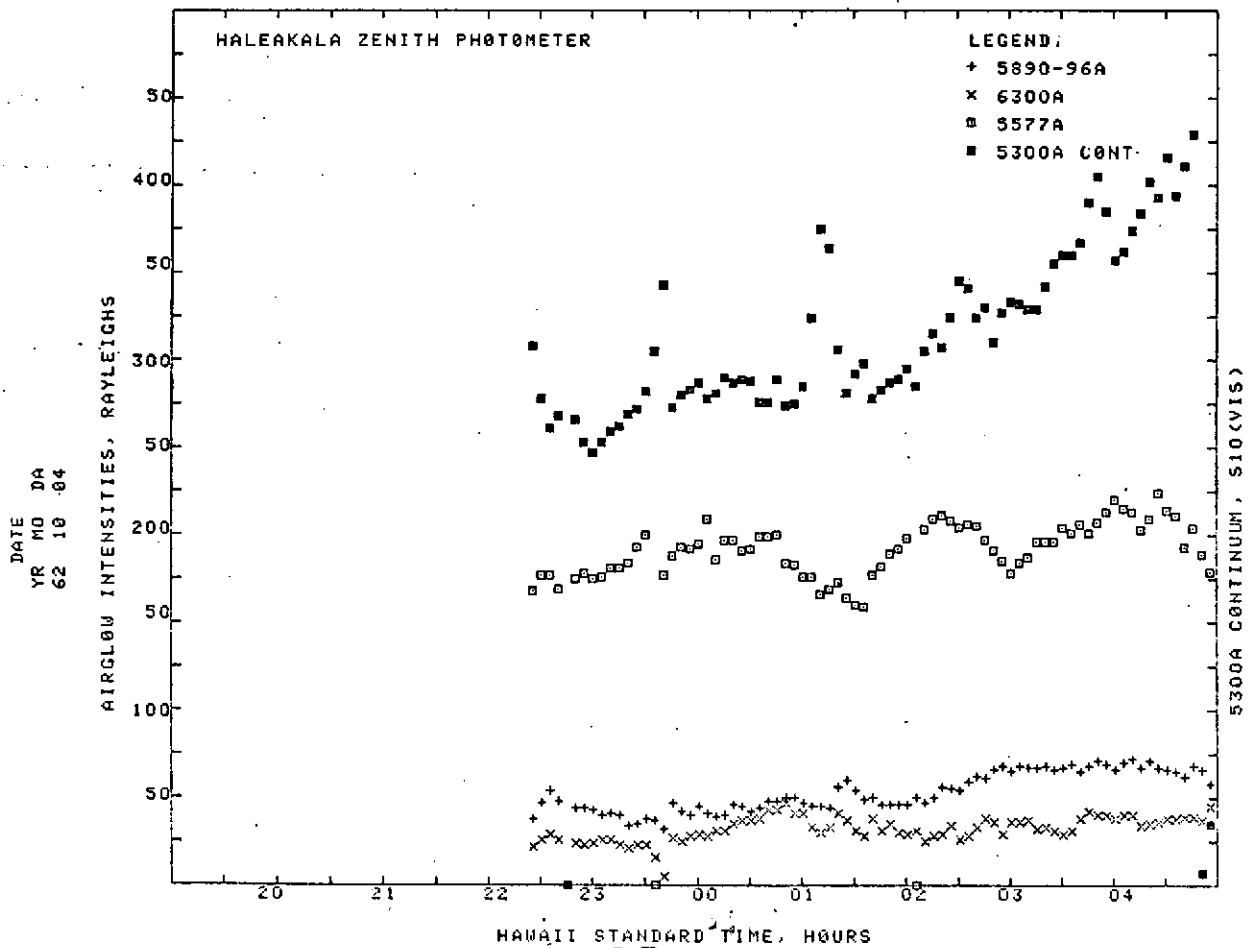
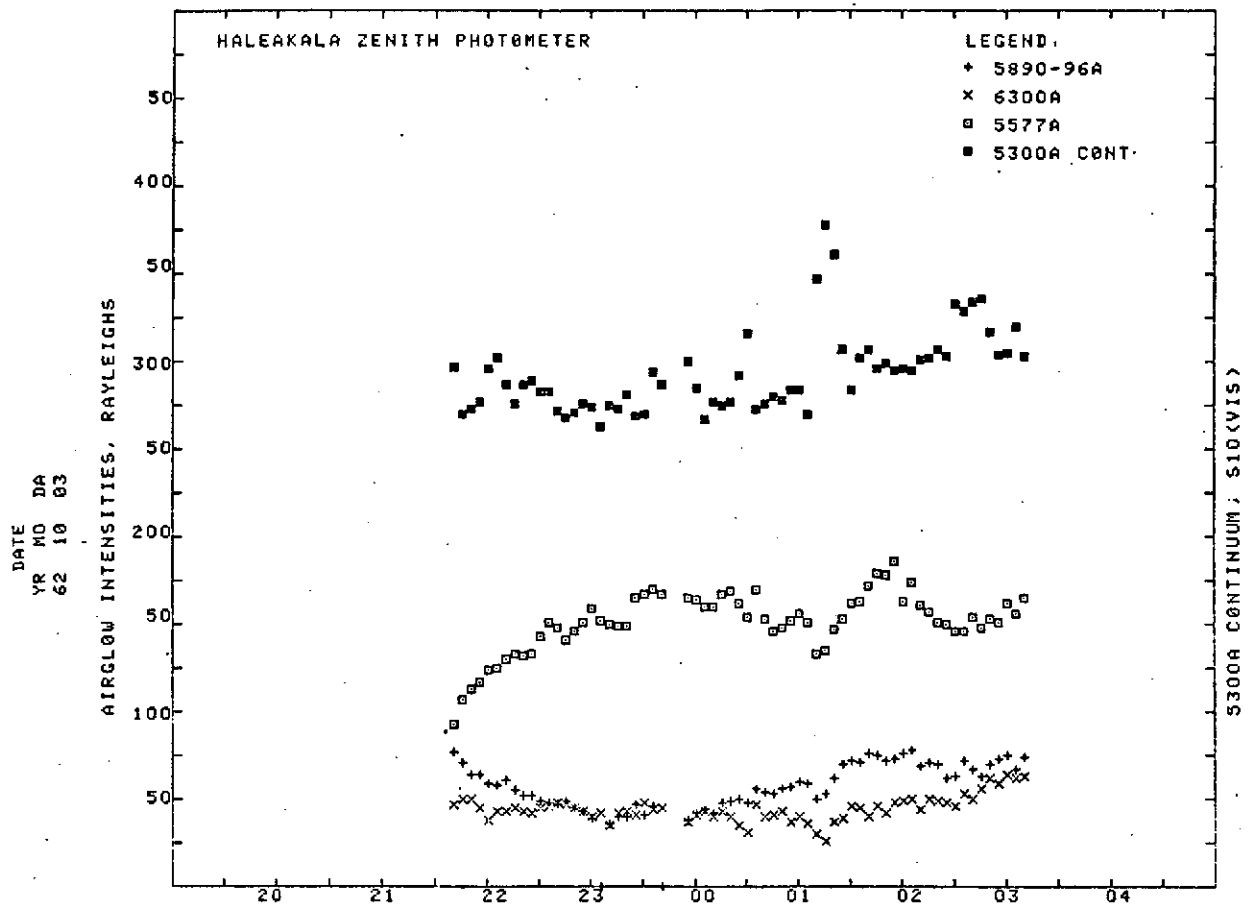


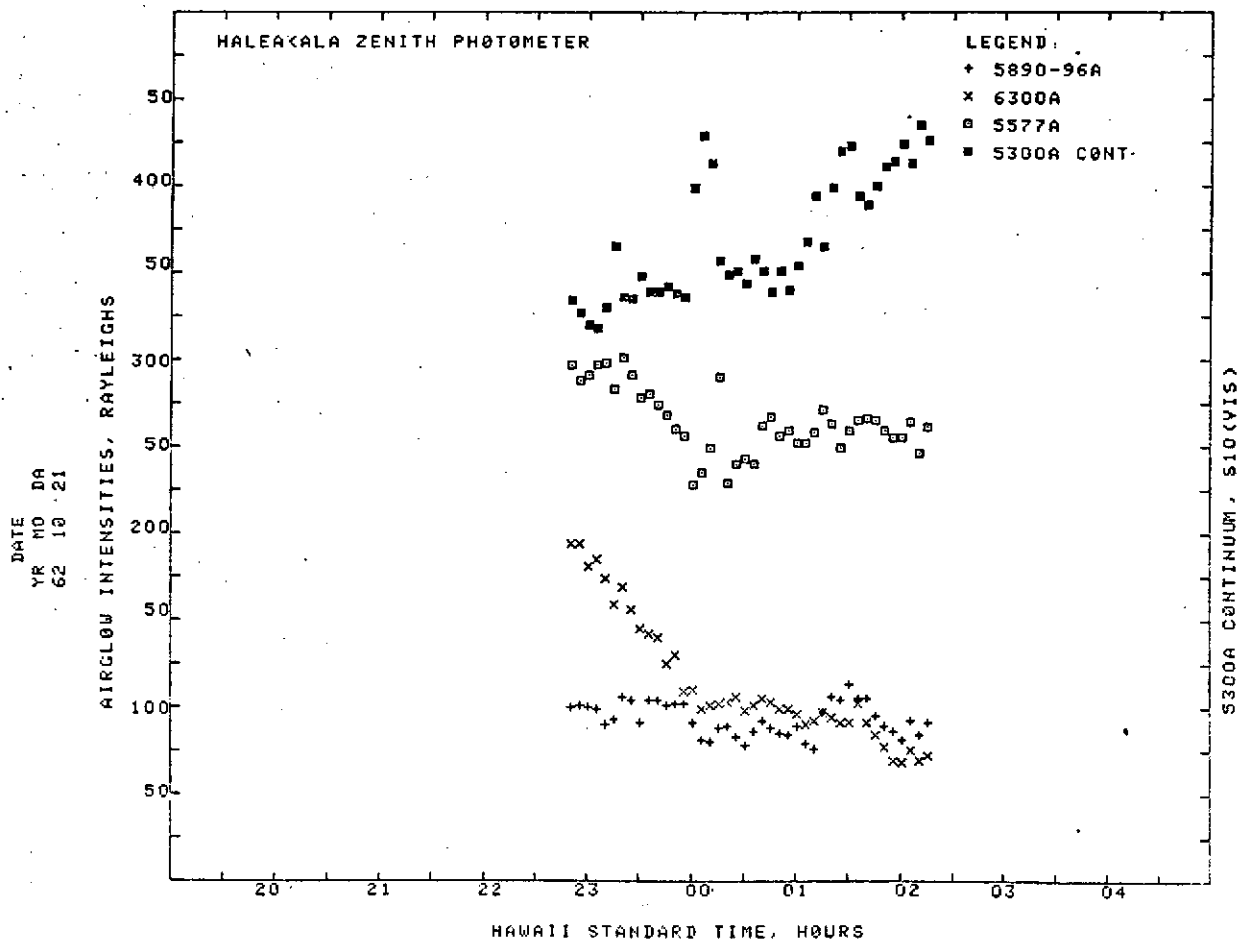
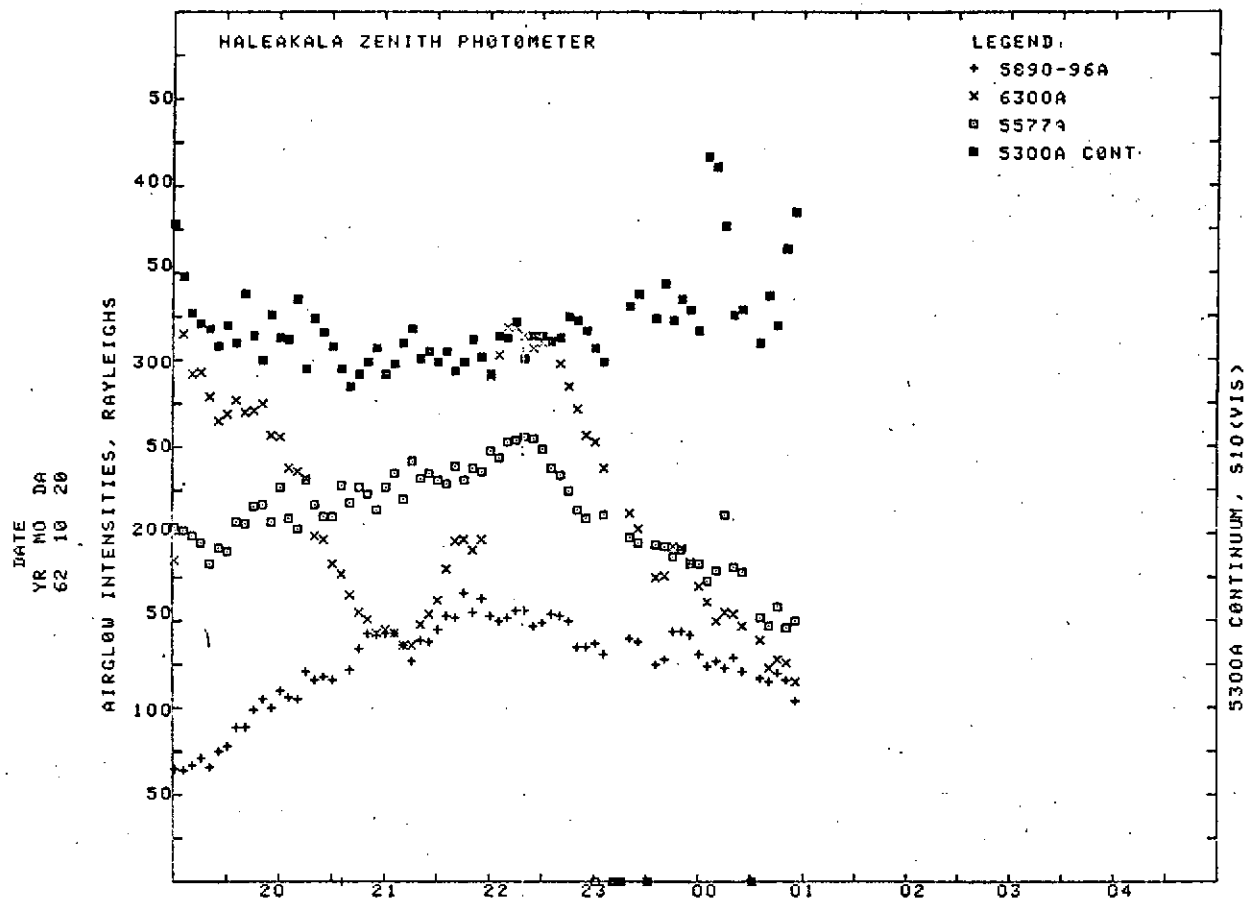
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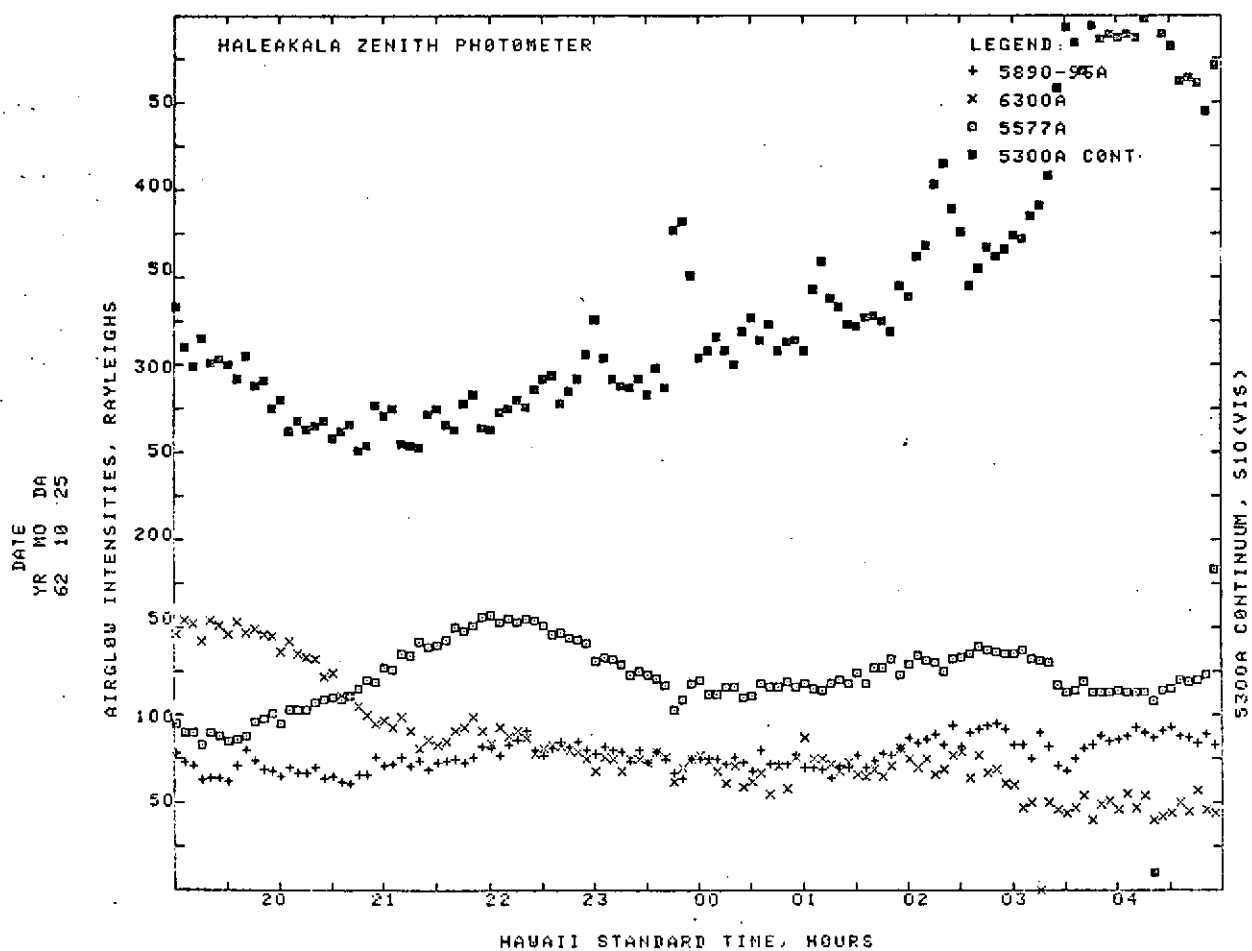
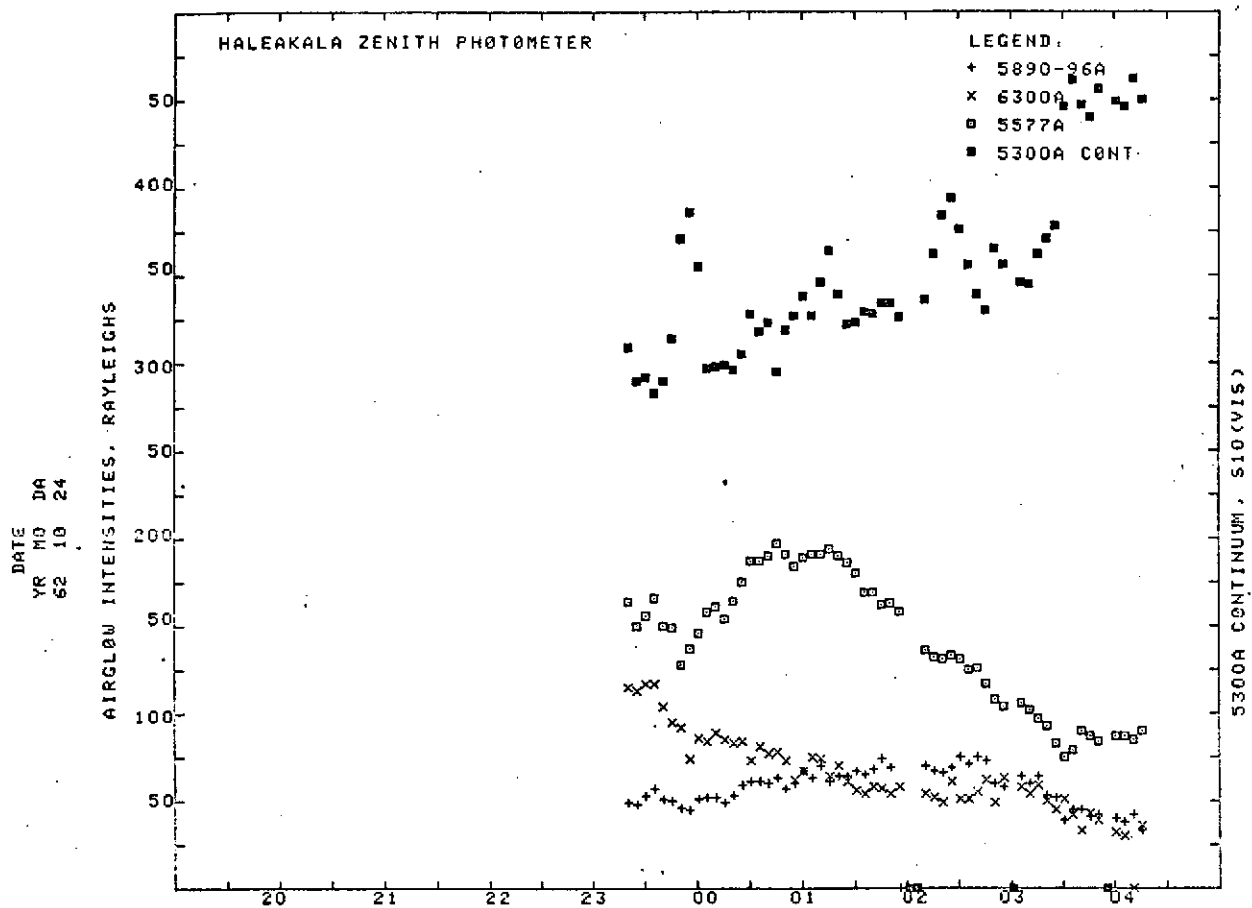


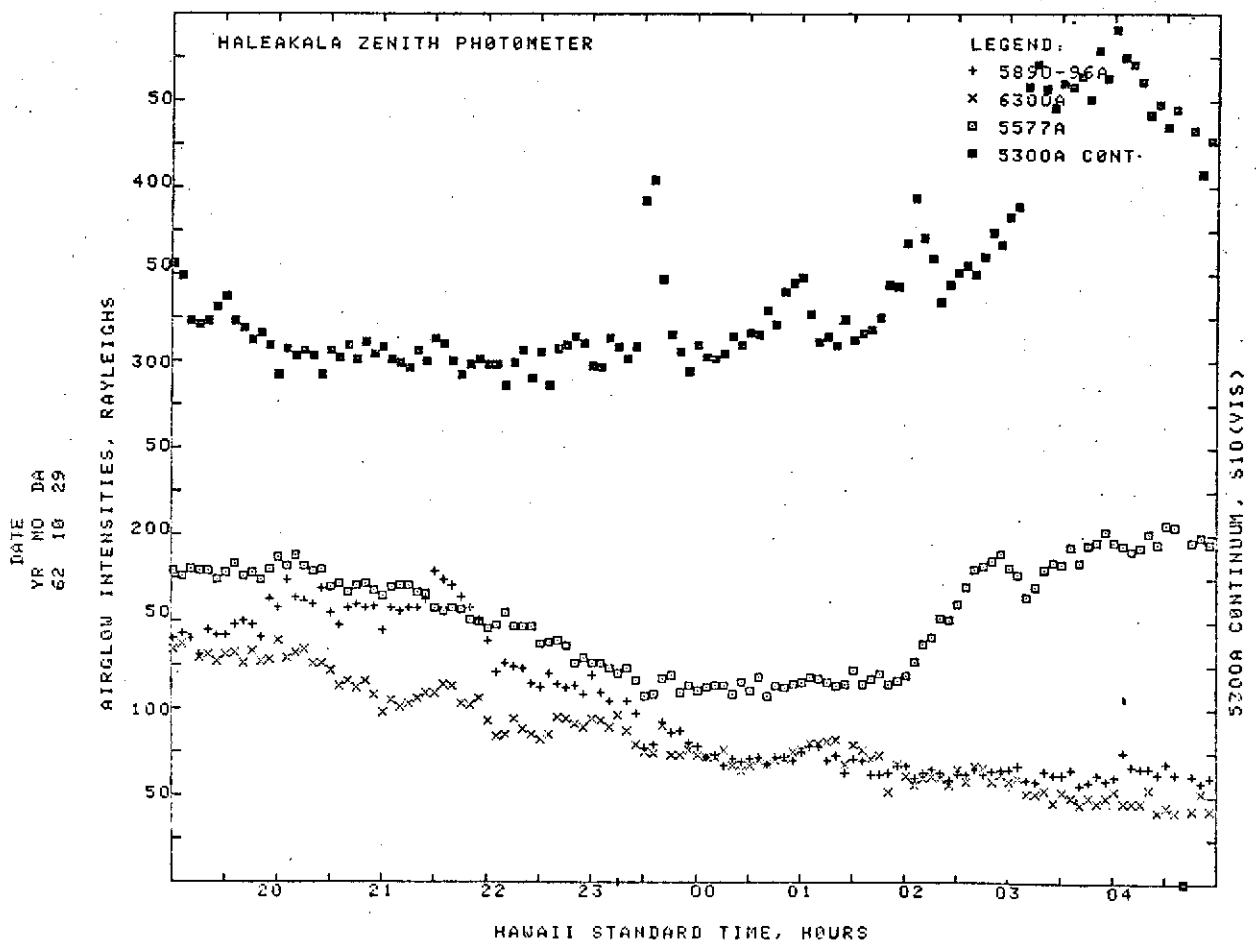
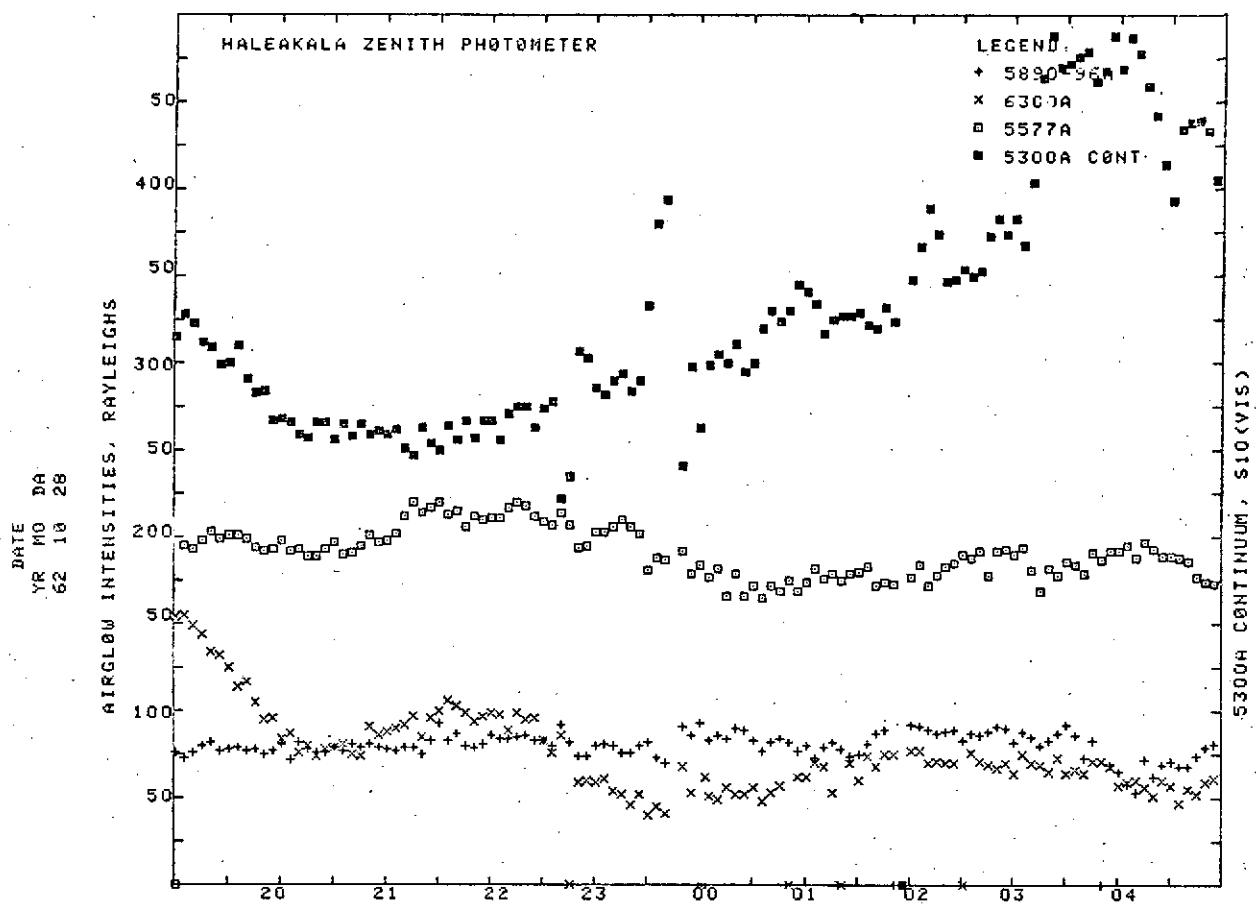




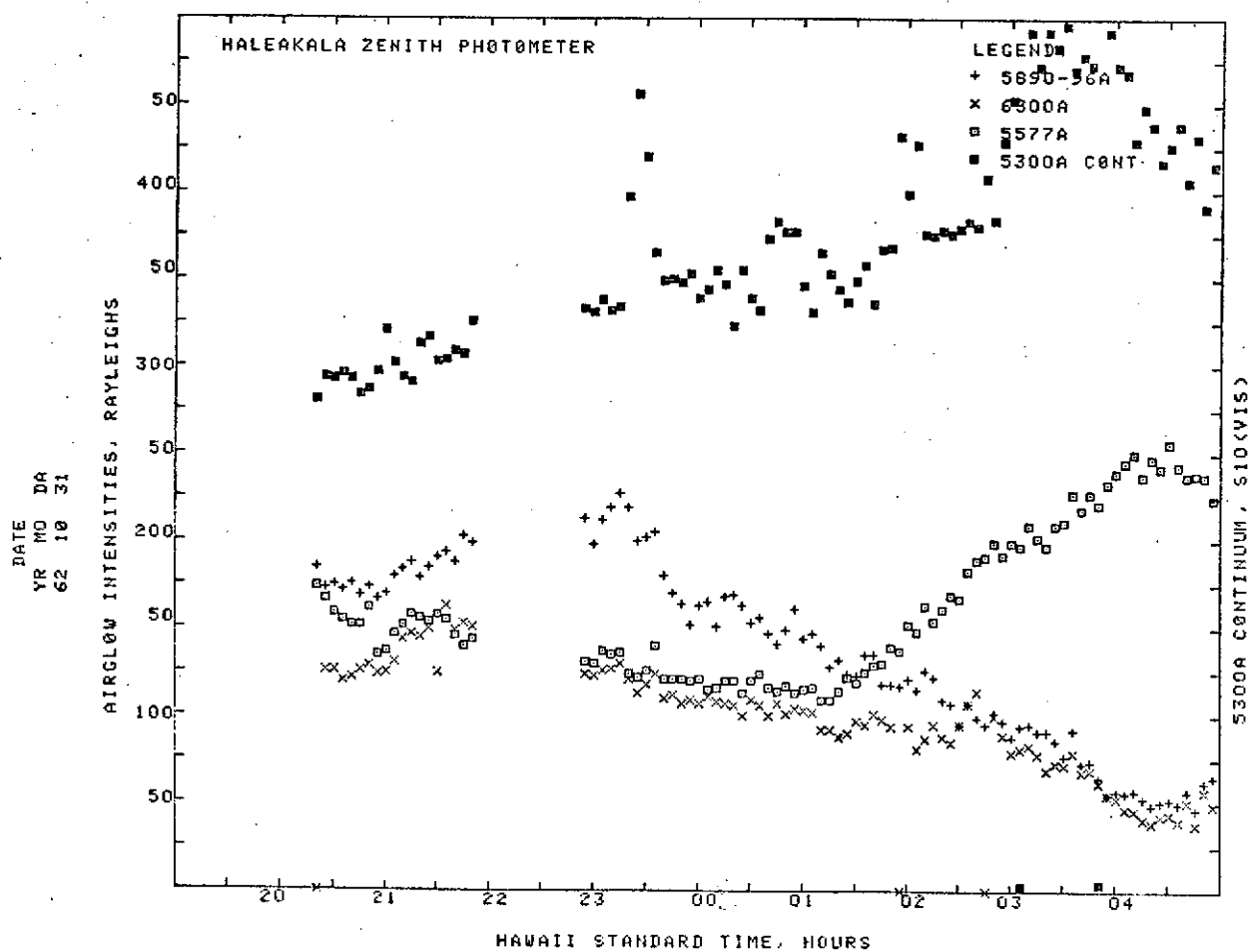
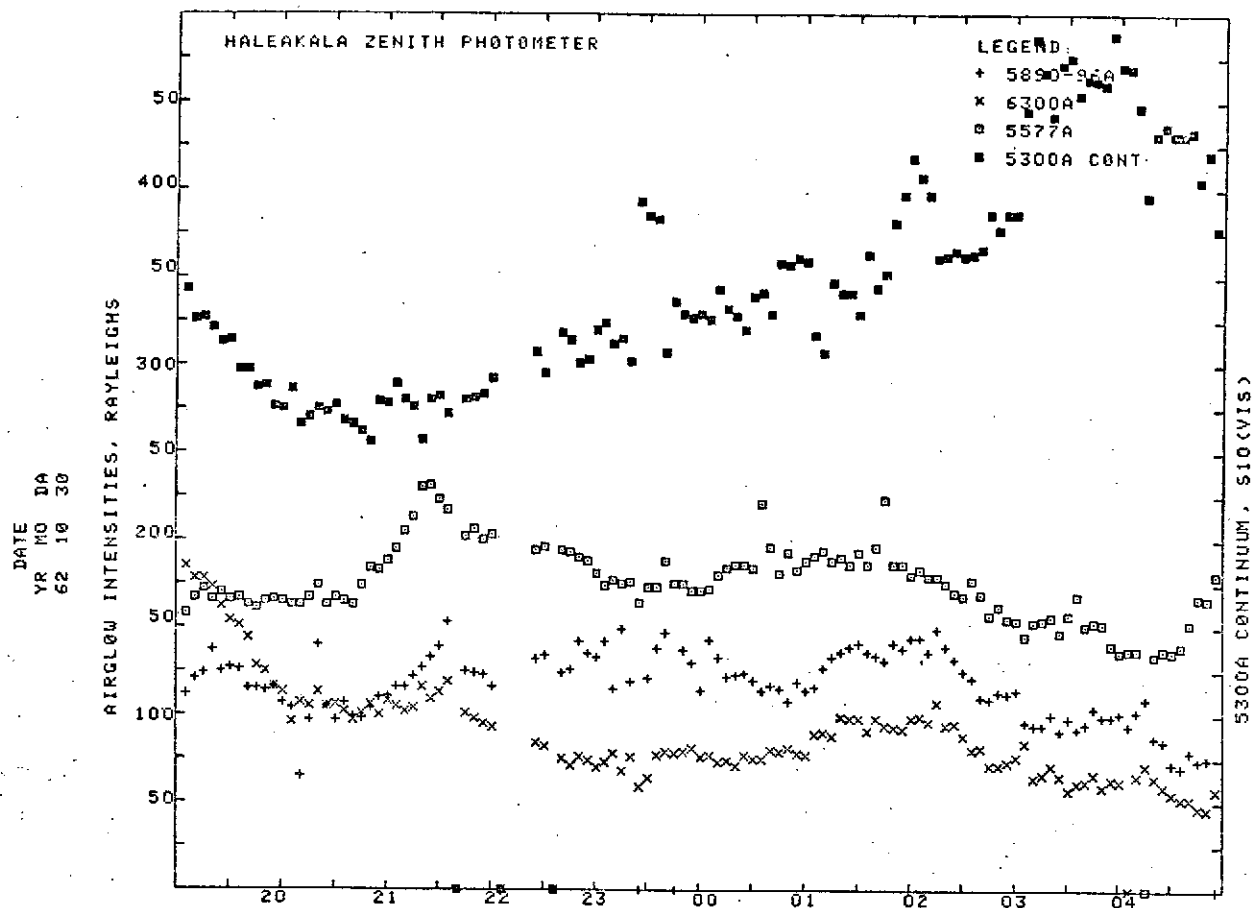




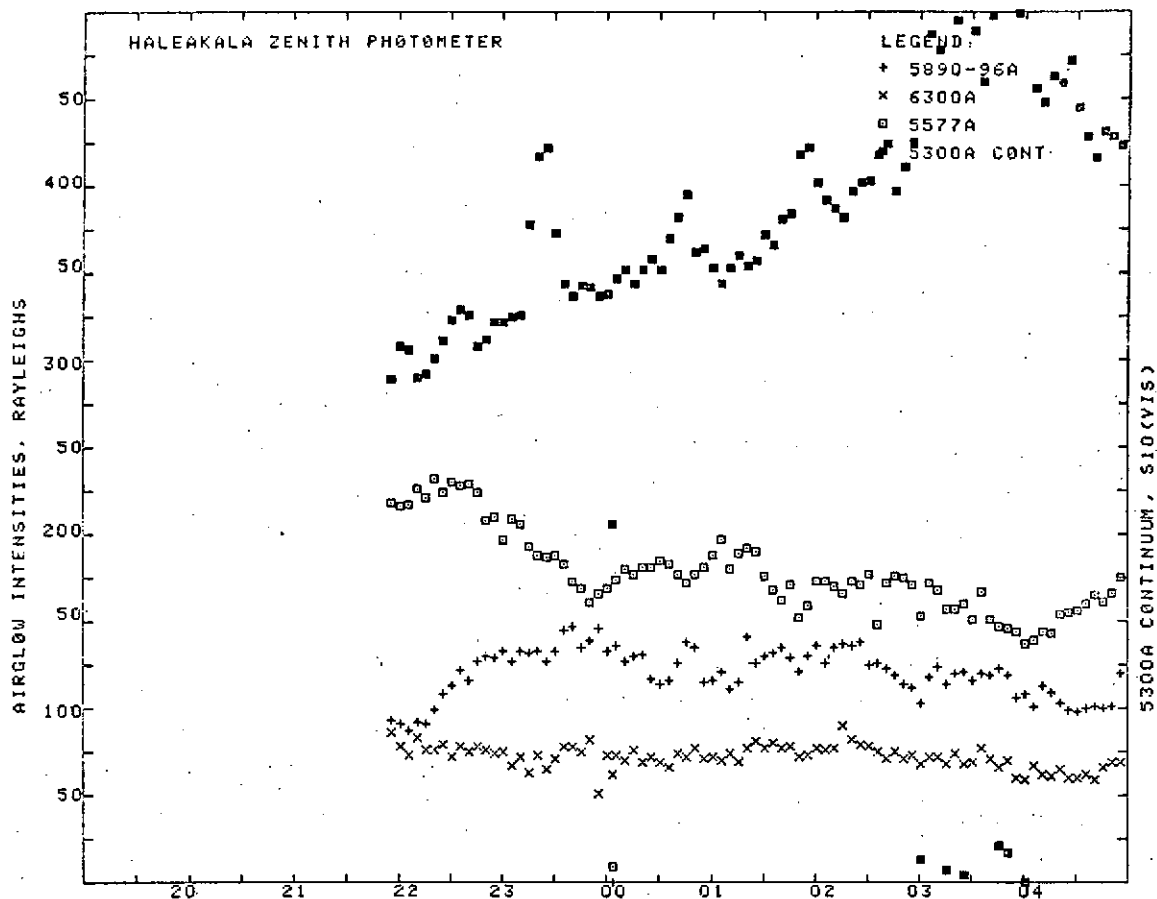




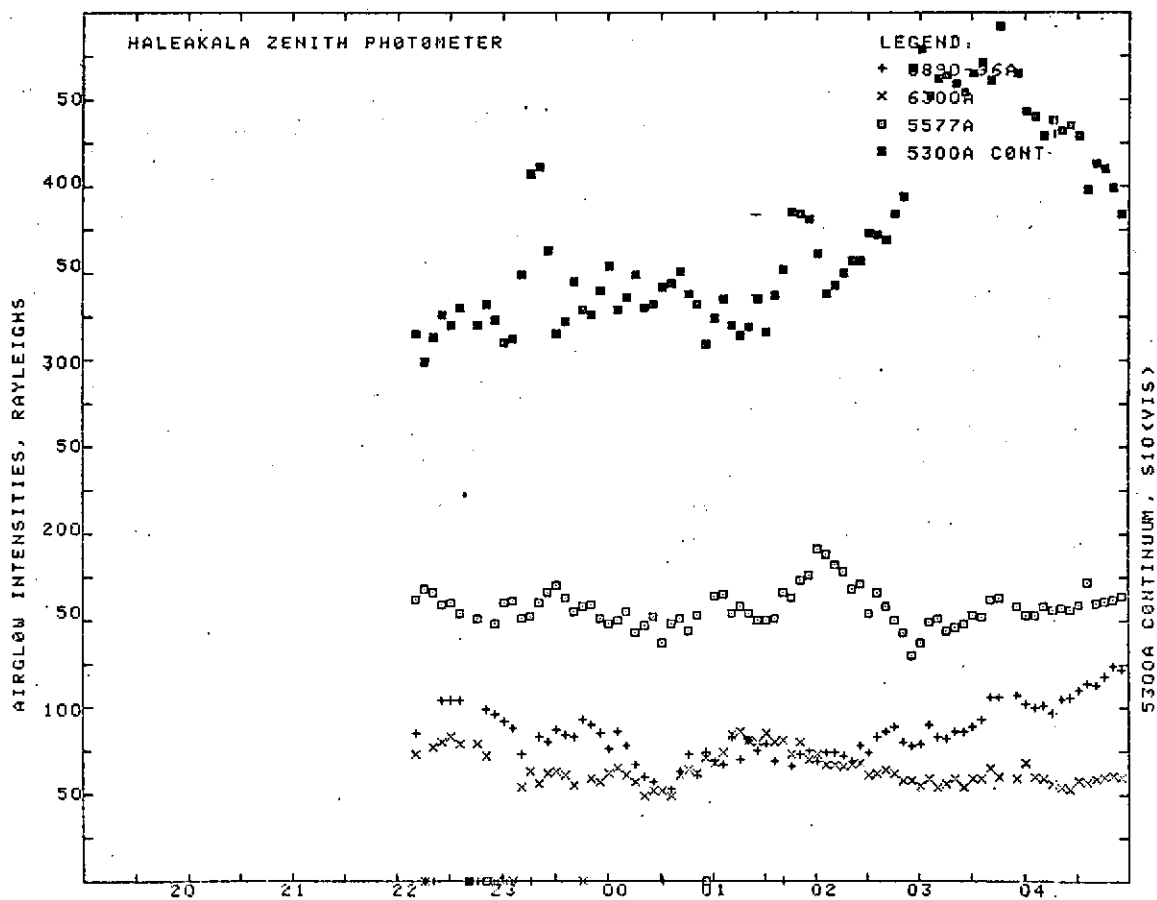




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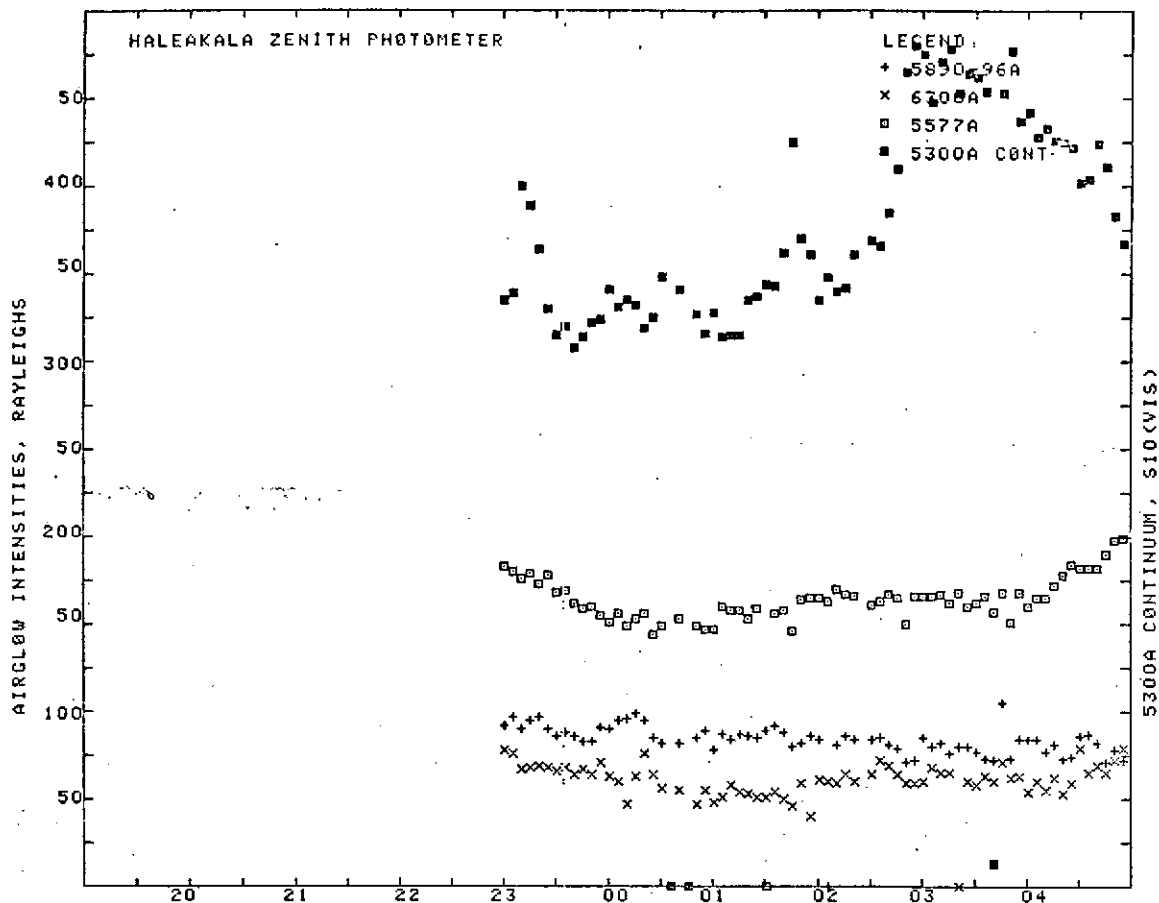
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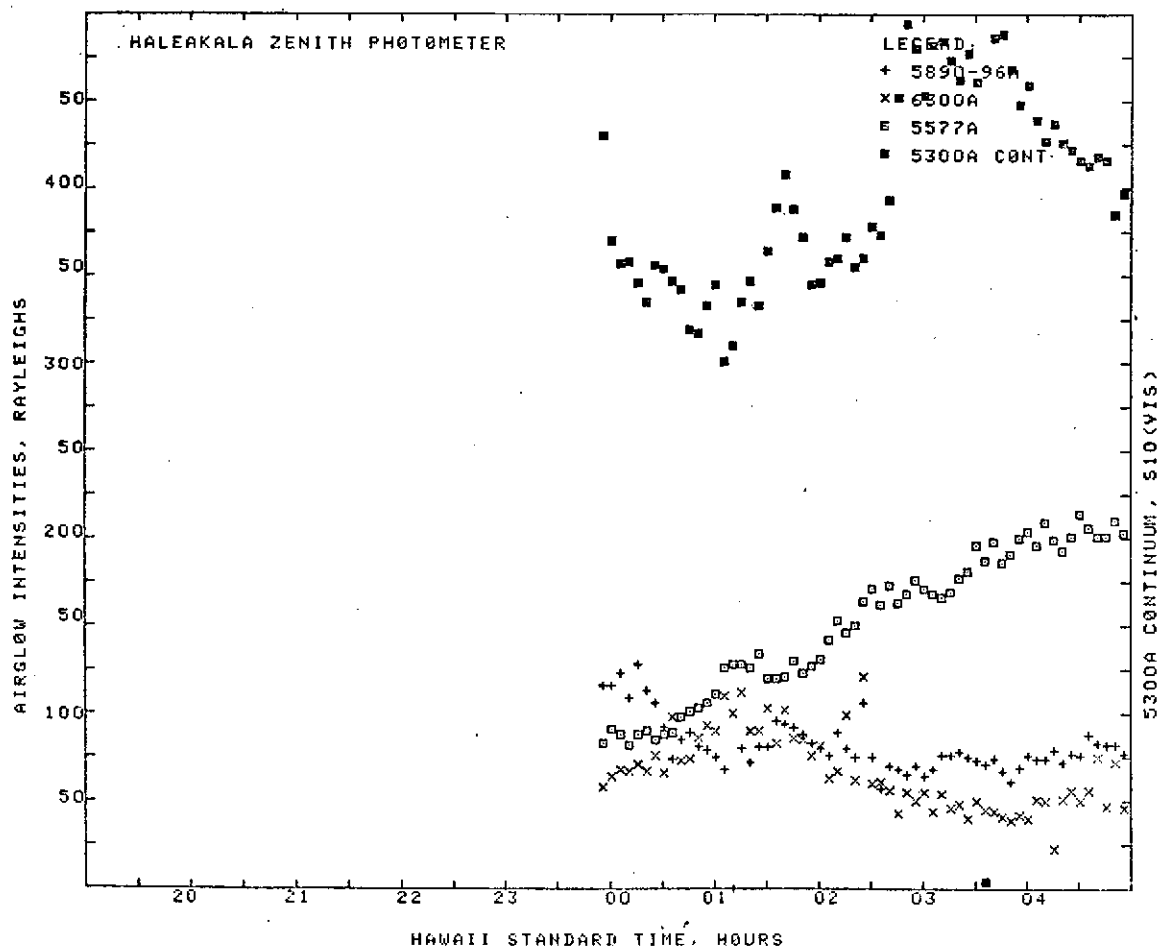
HAWAII STANDARD TIME, HOURS

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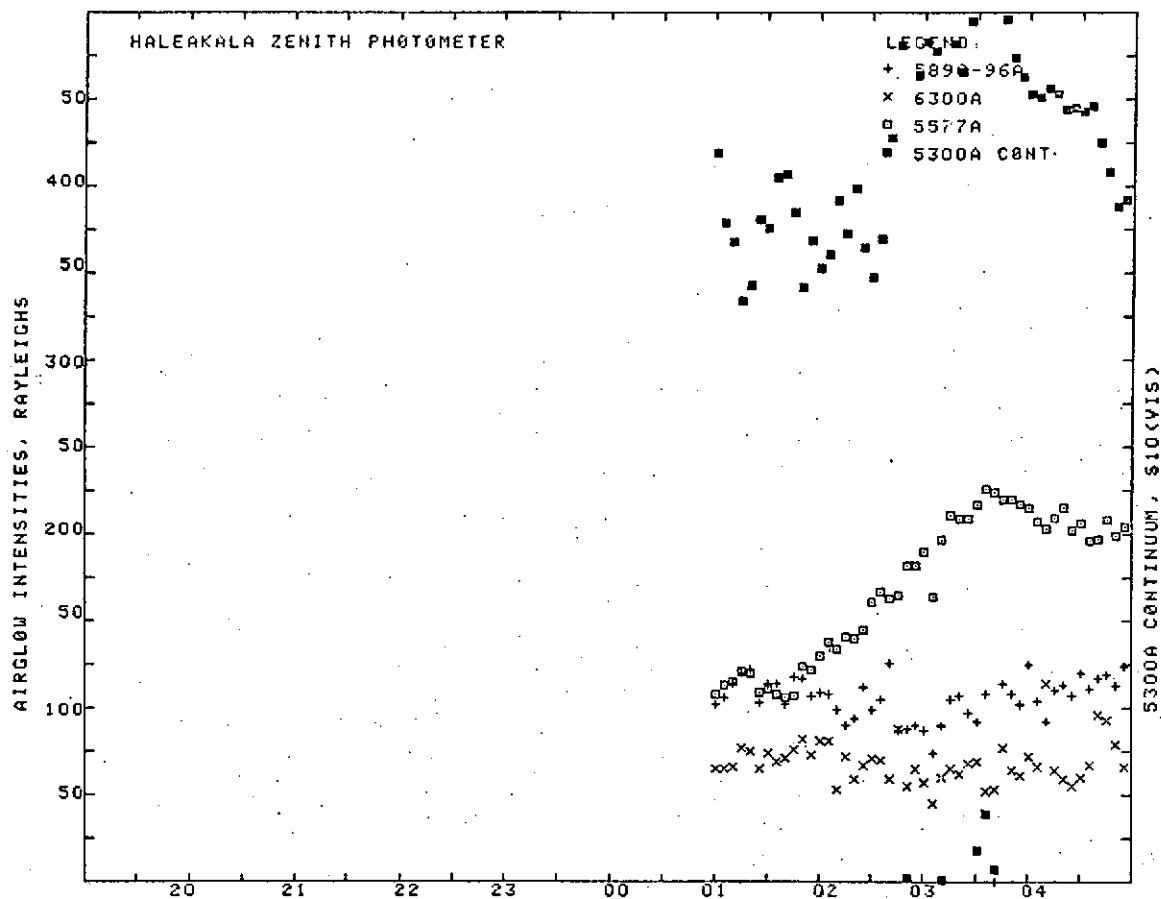
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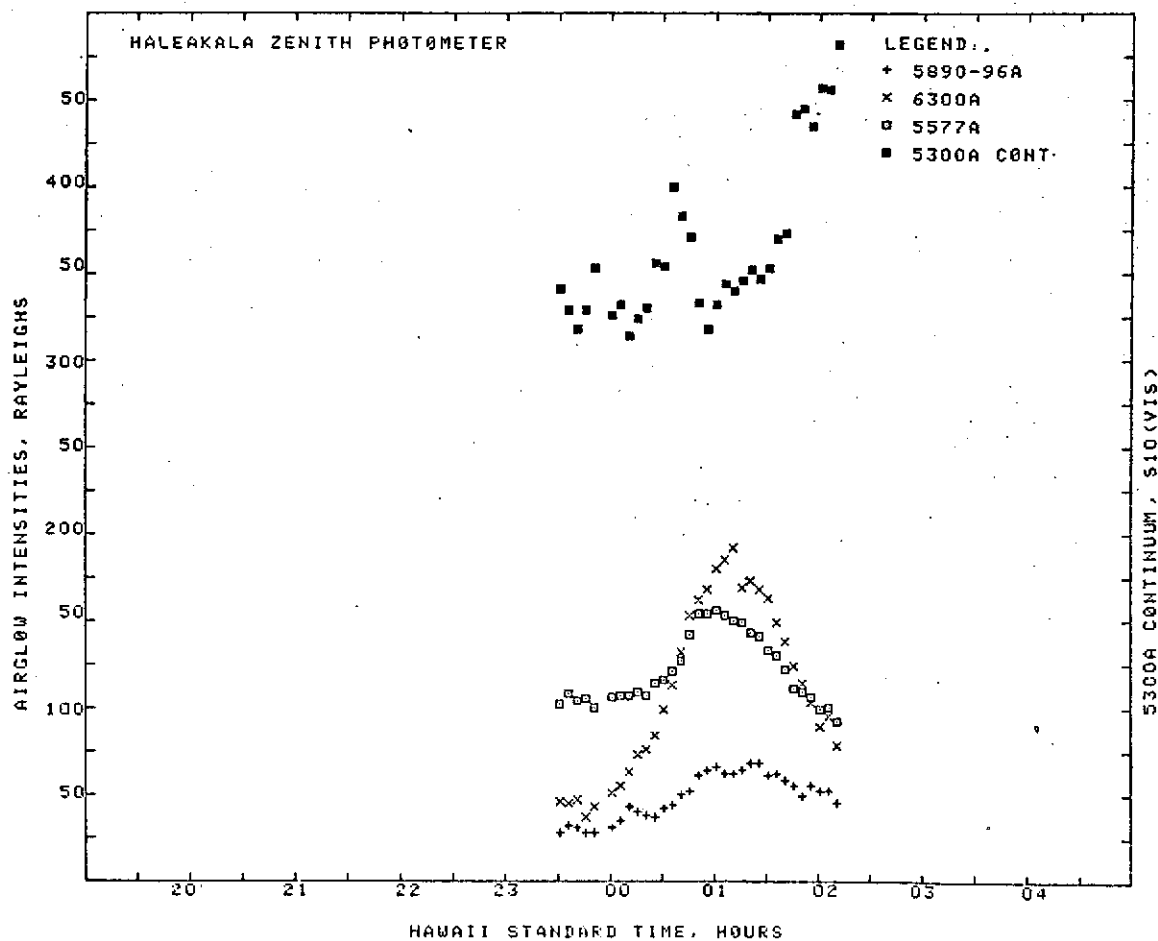
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DATE  
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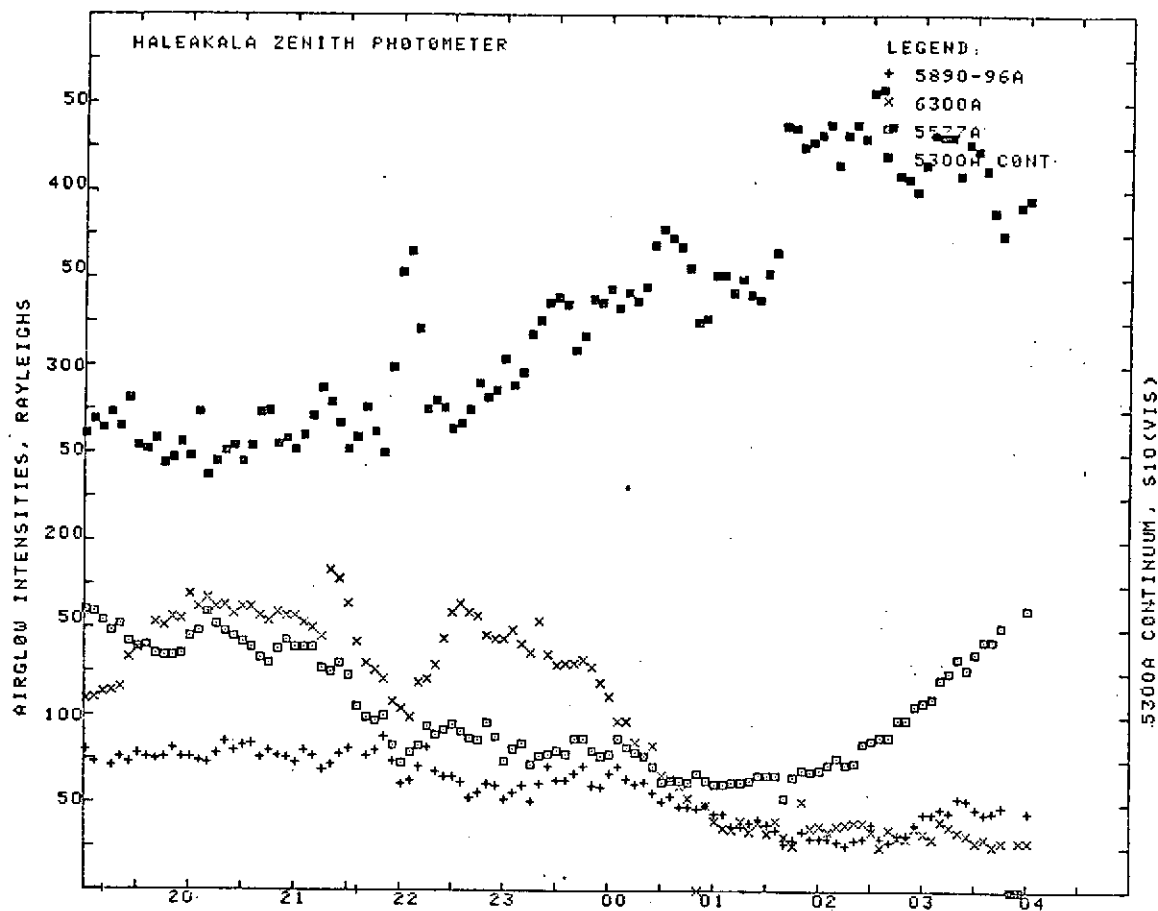


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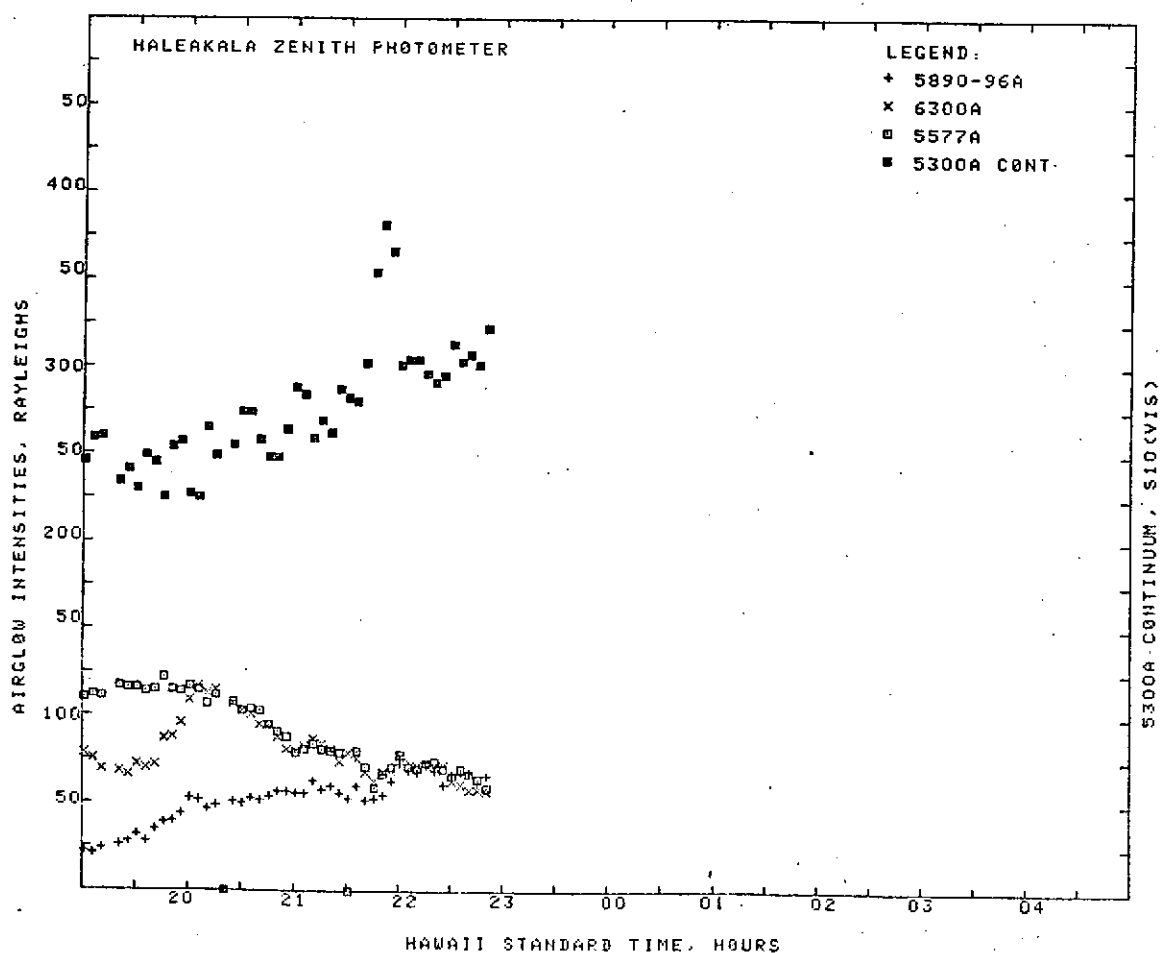


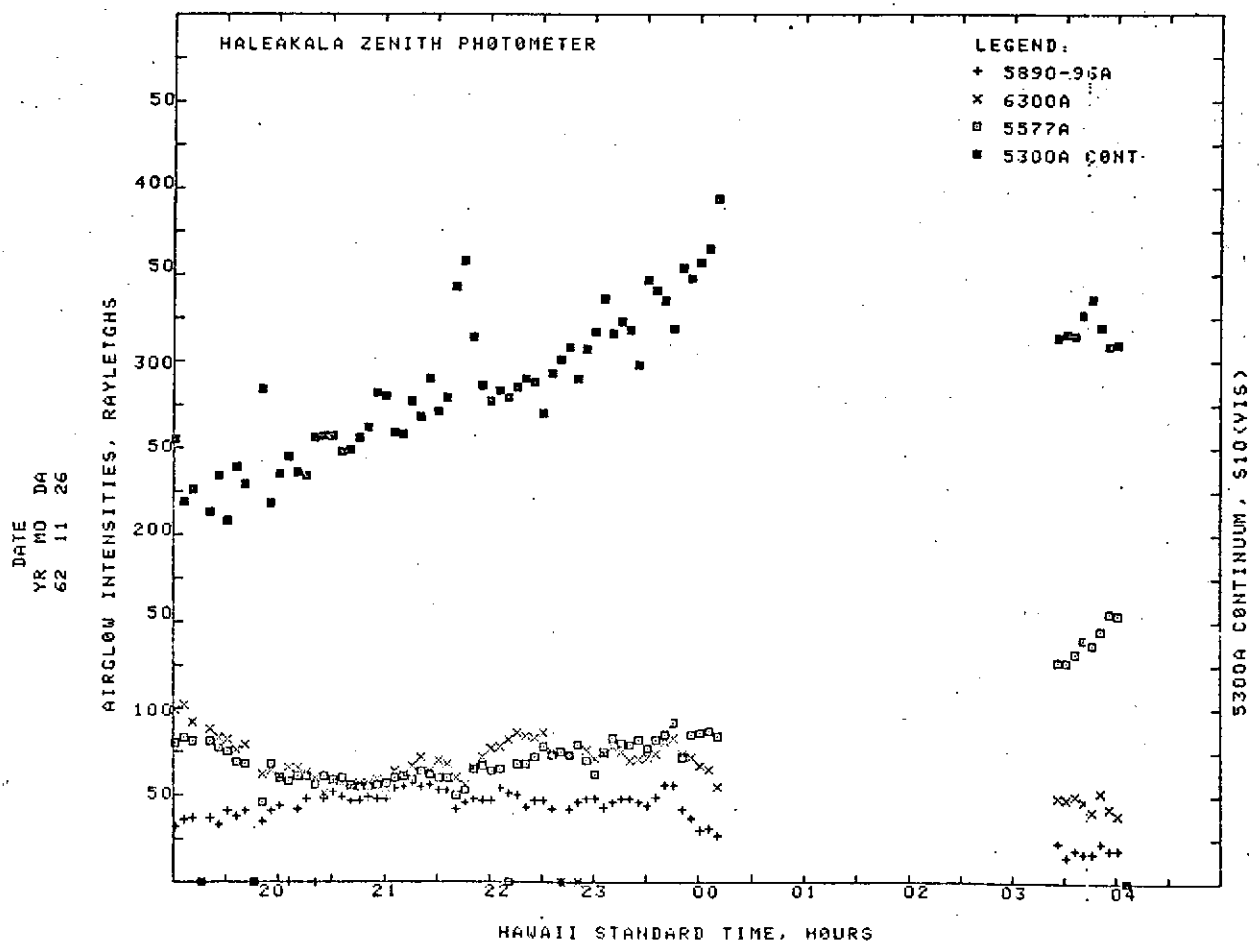
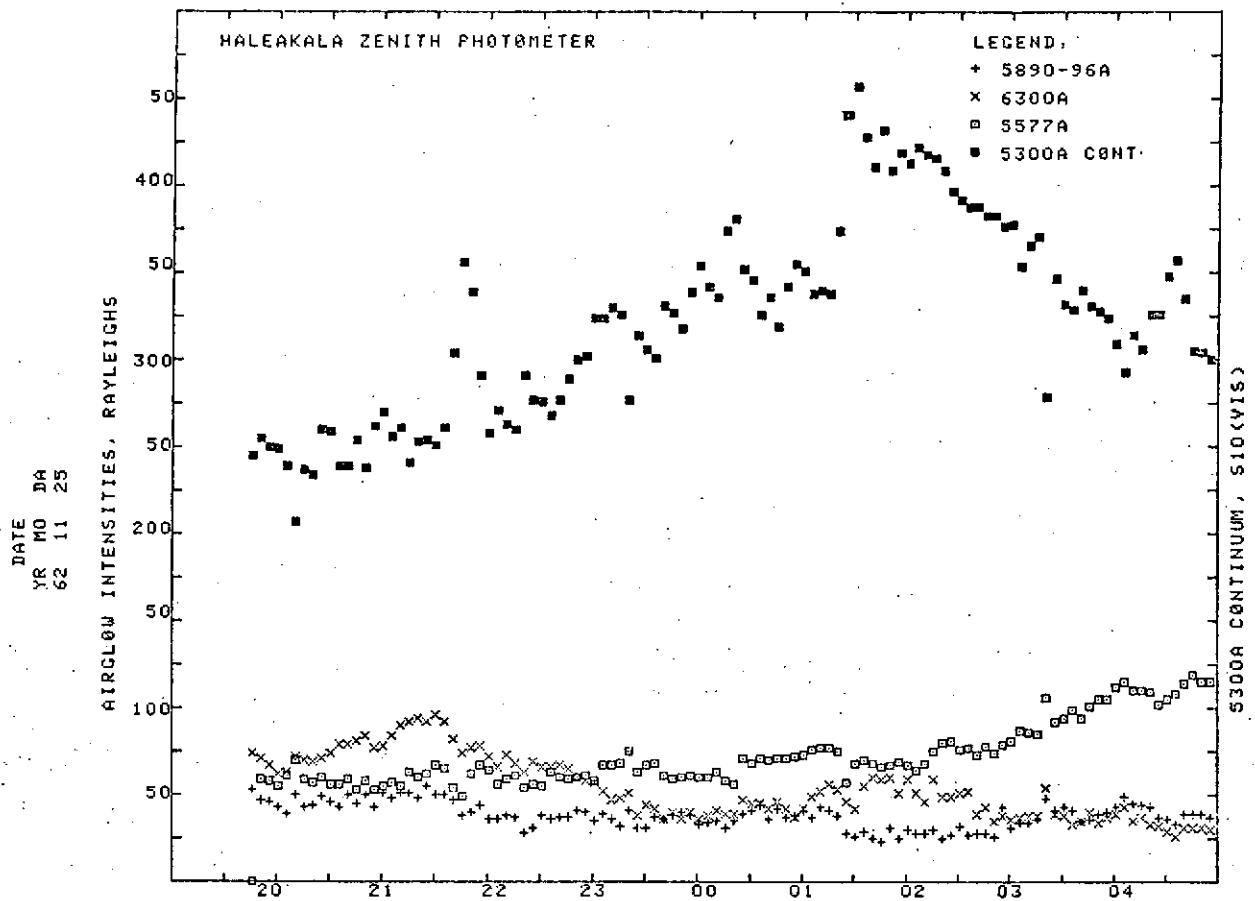
HAWAII STANDARD TIME, HOURS

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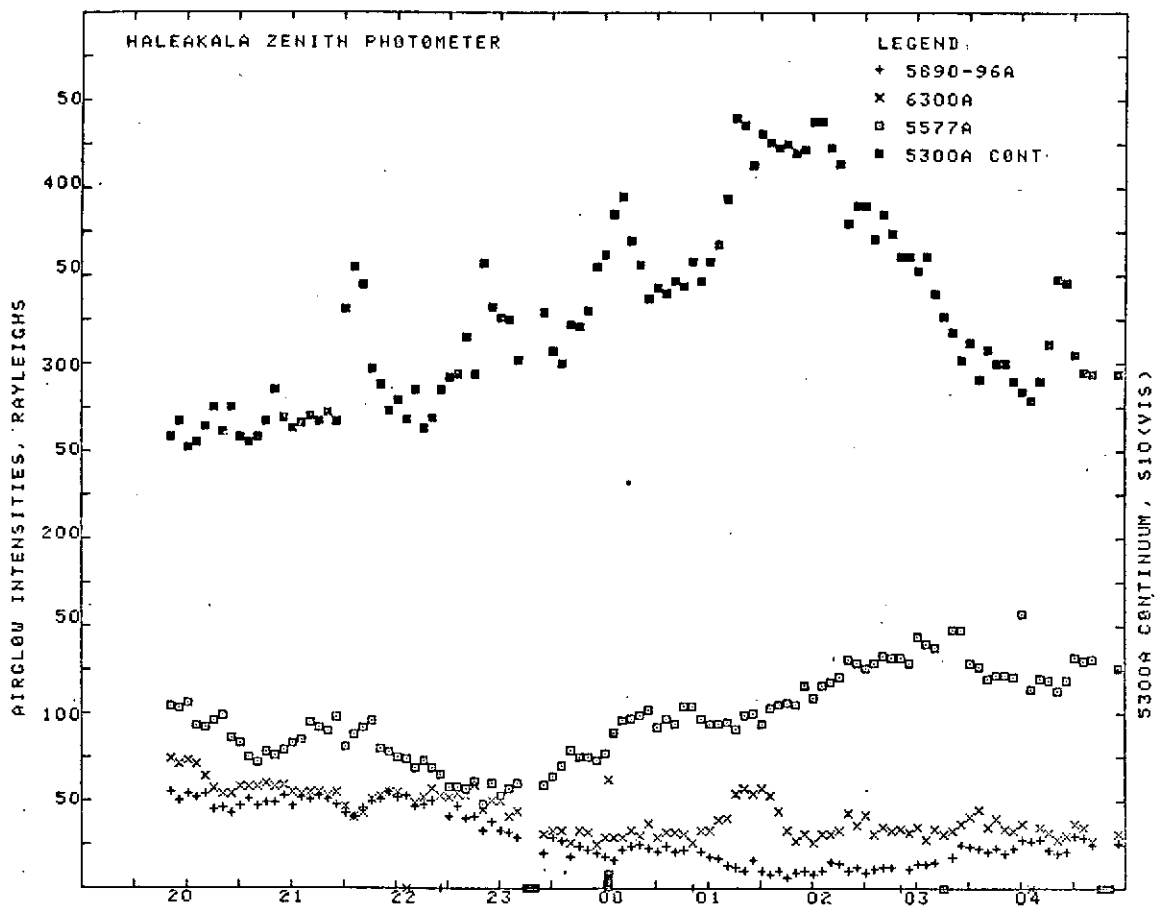


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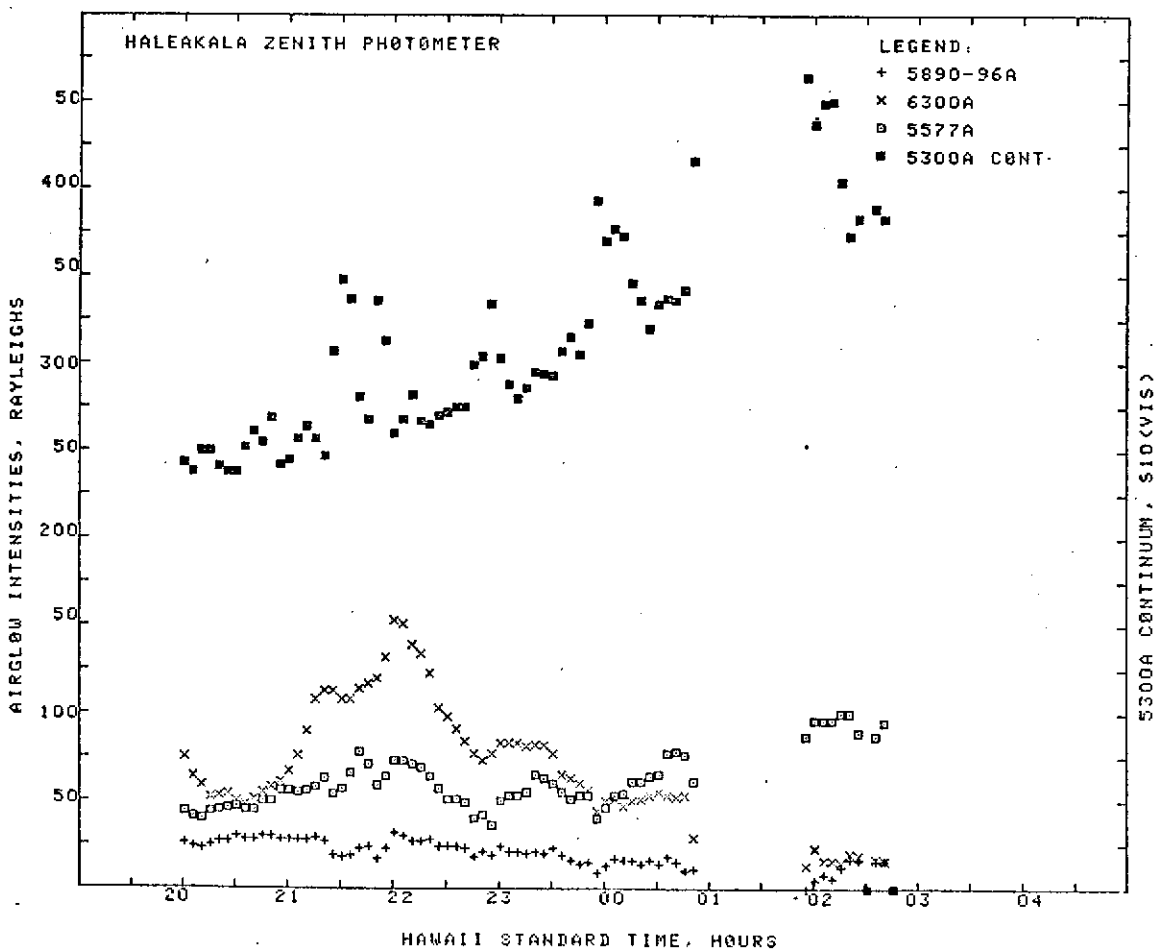


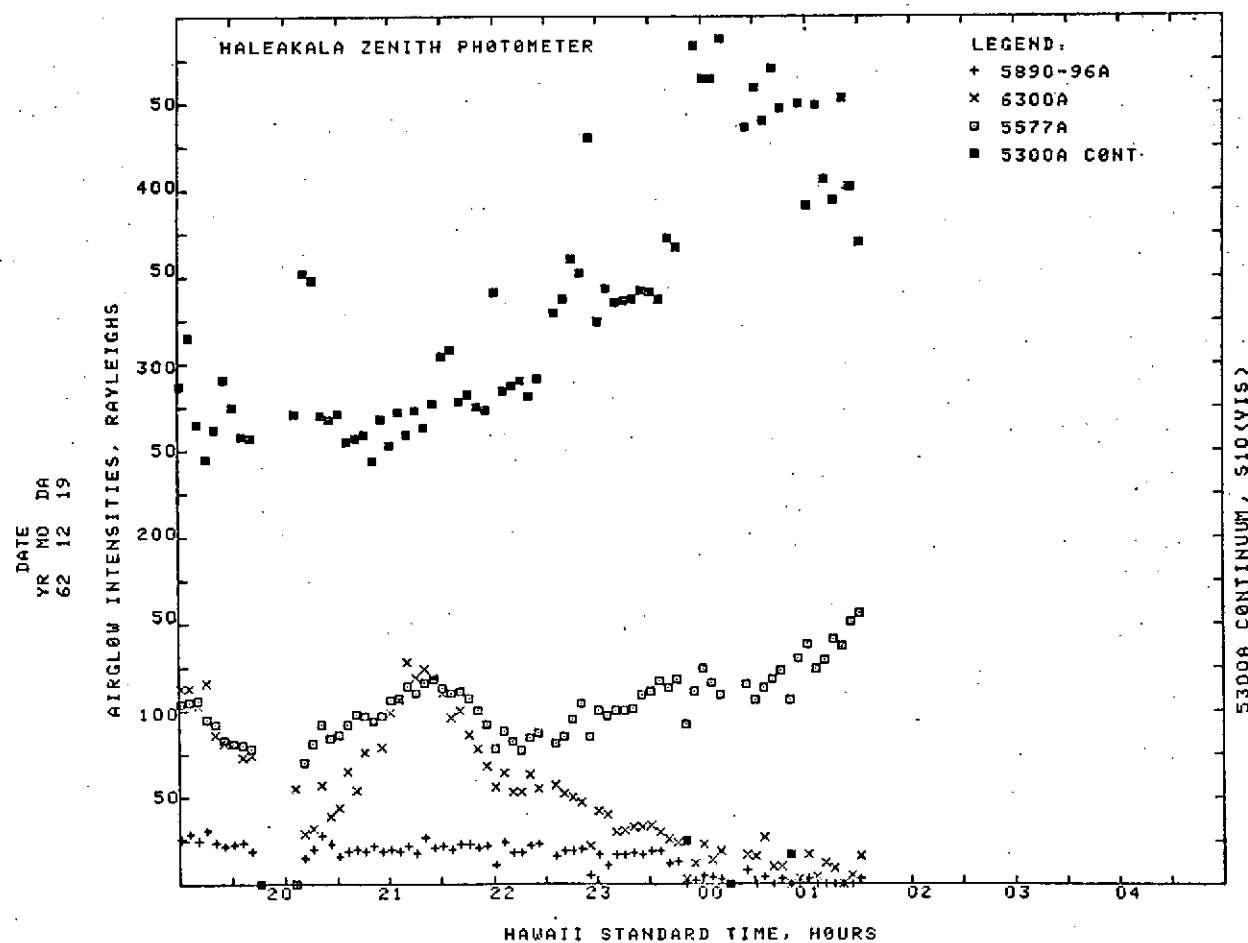
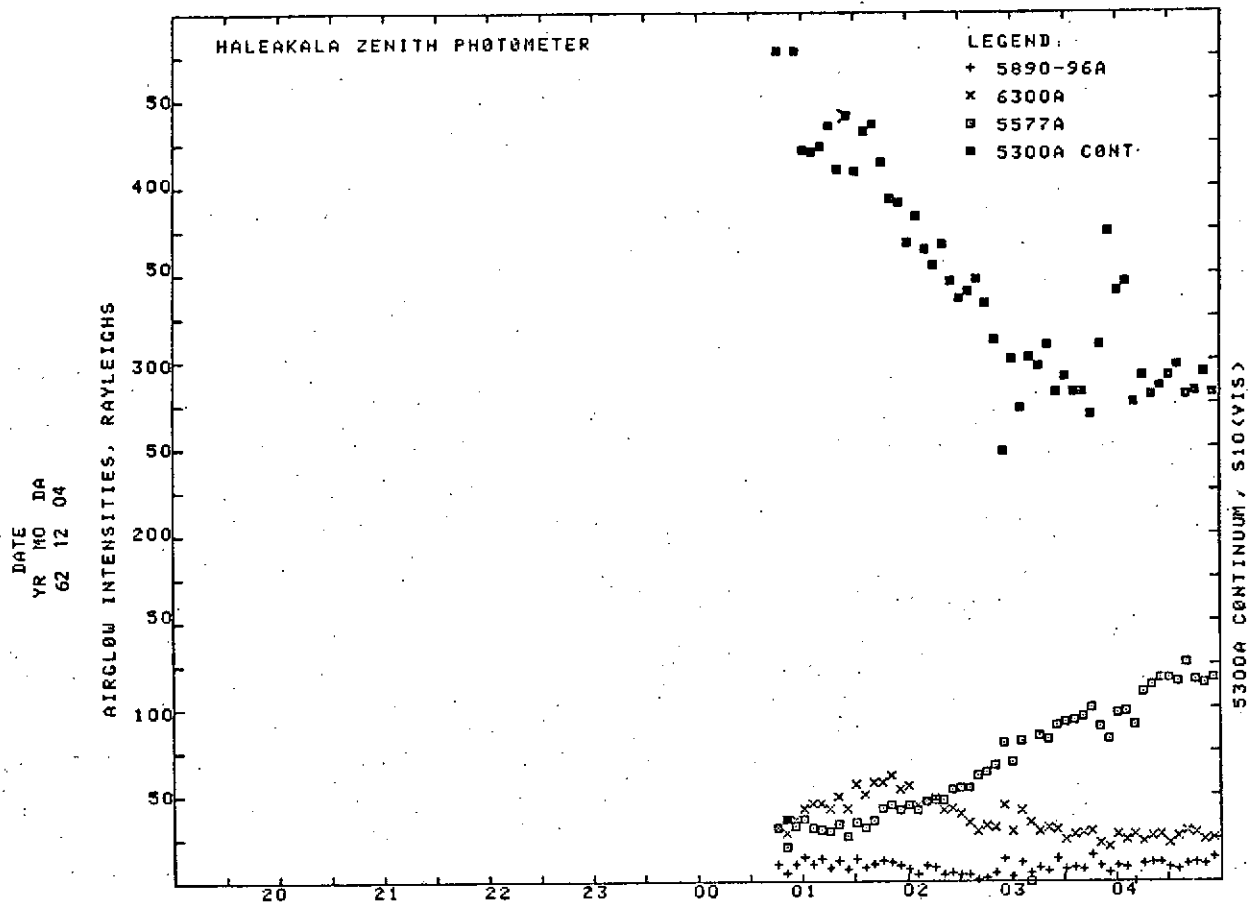


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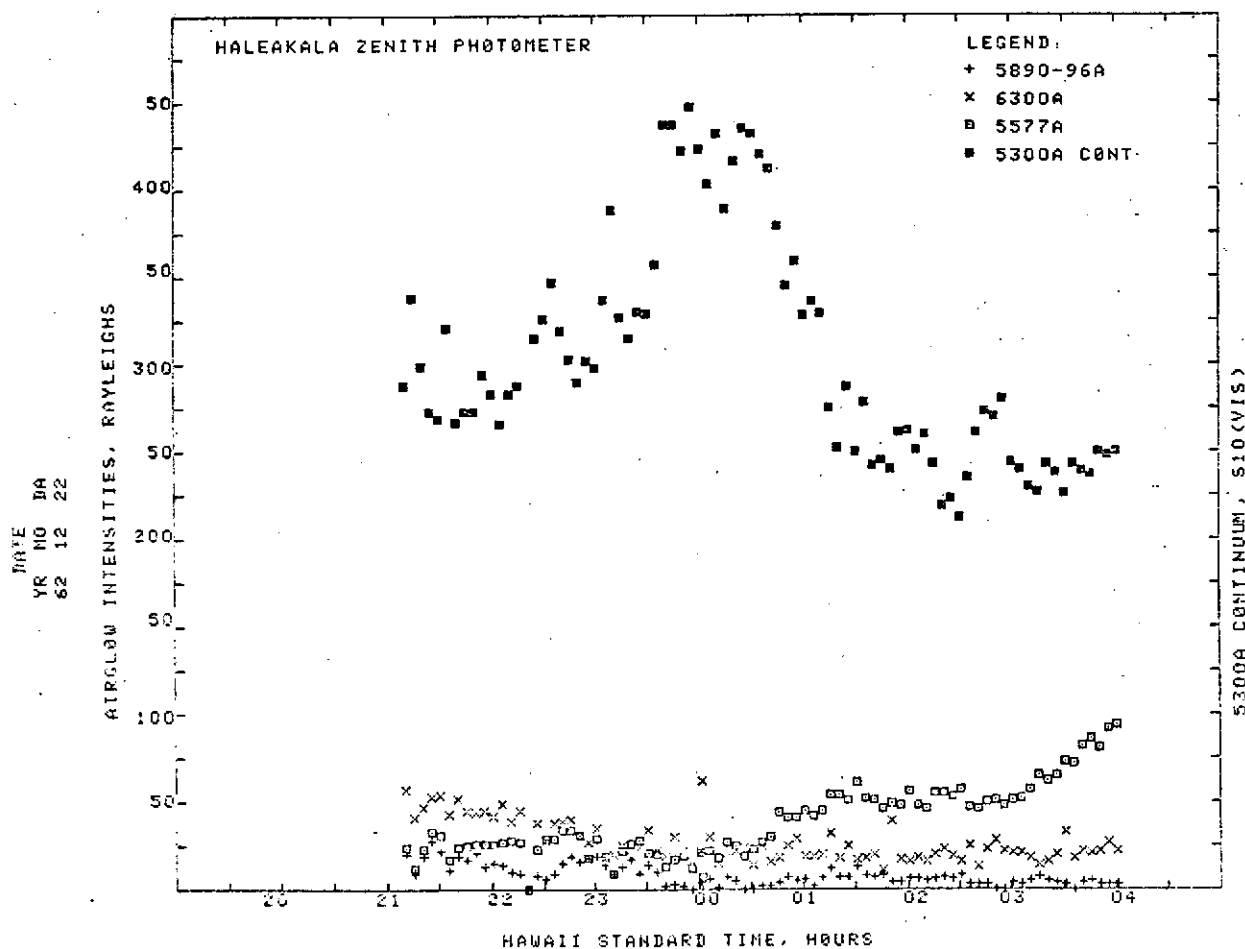
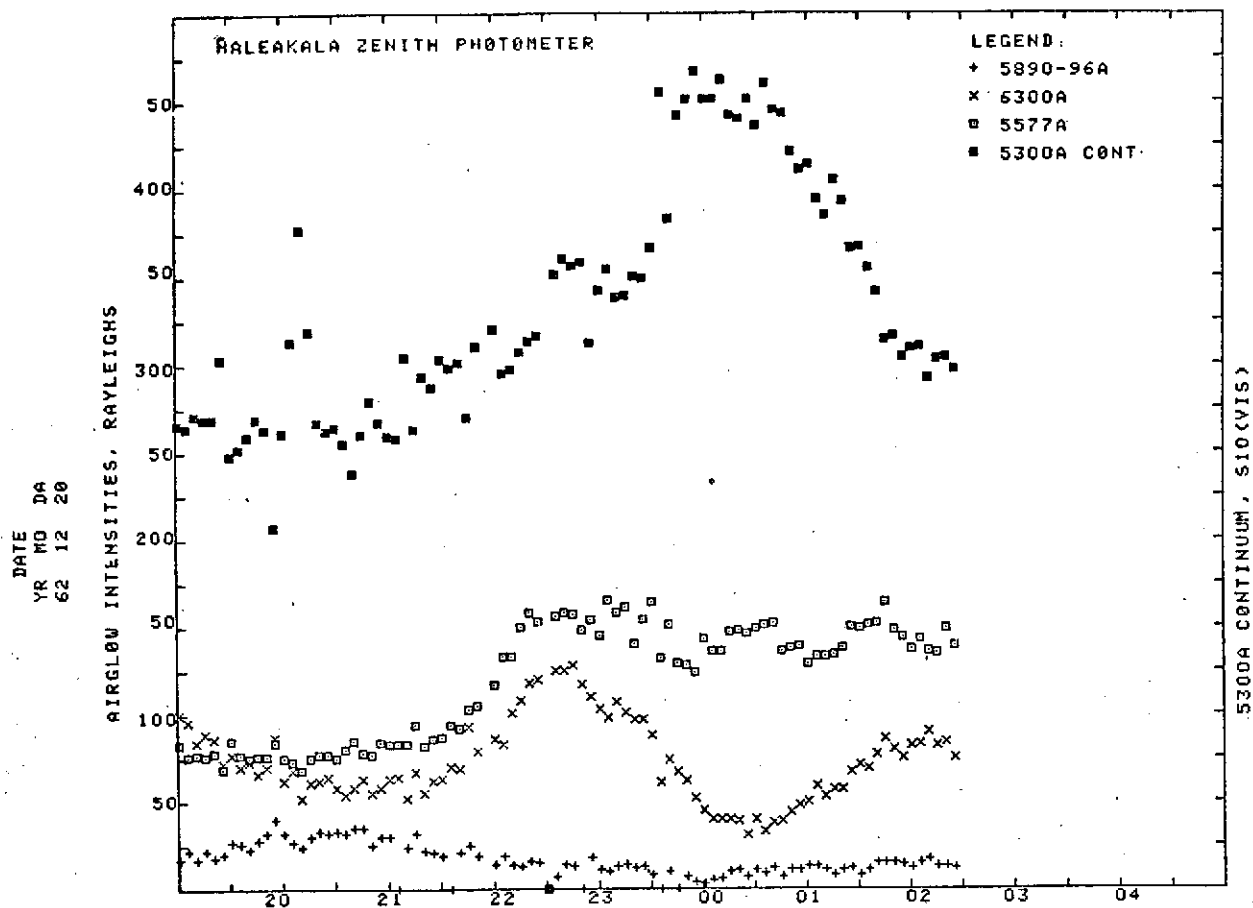


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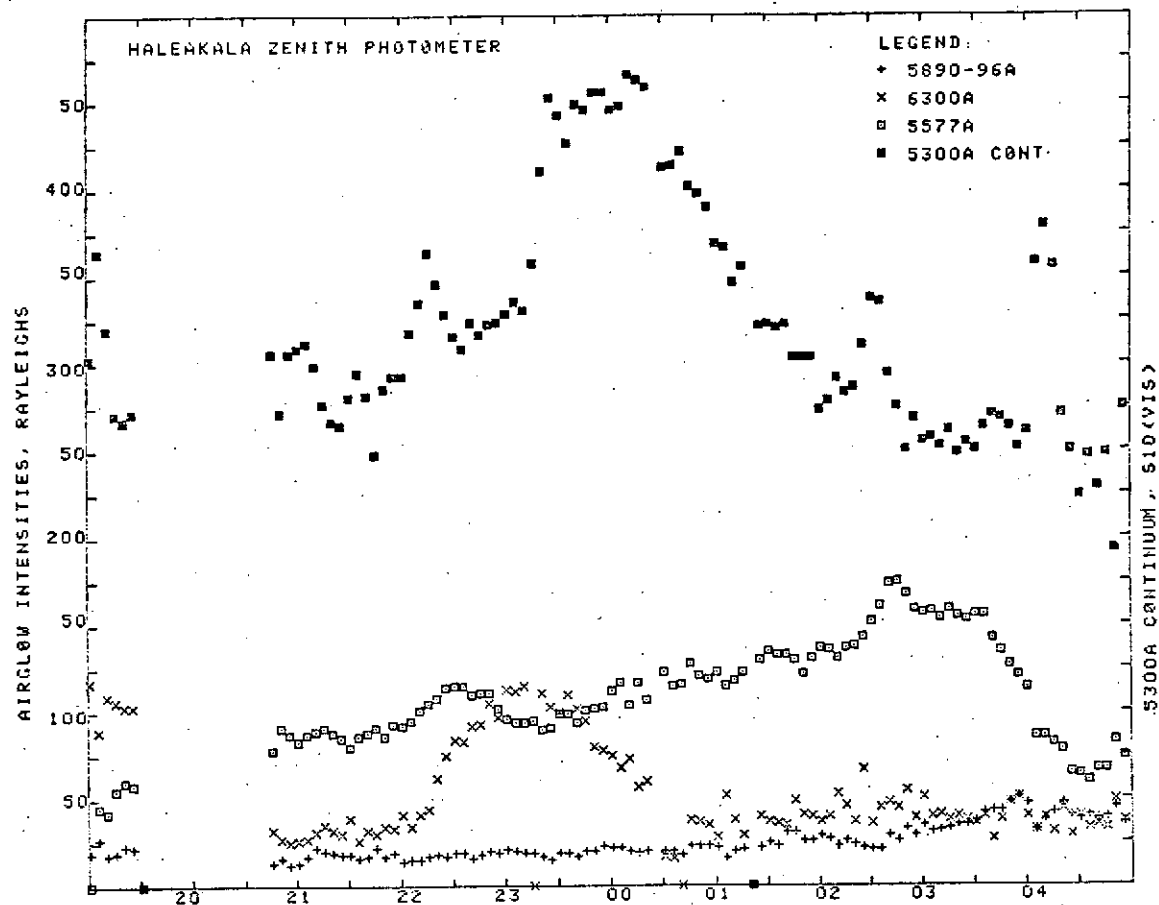




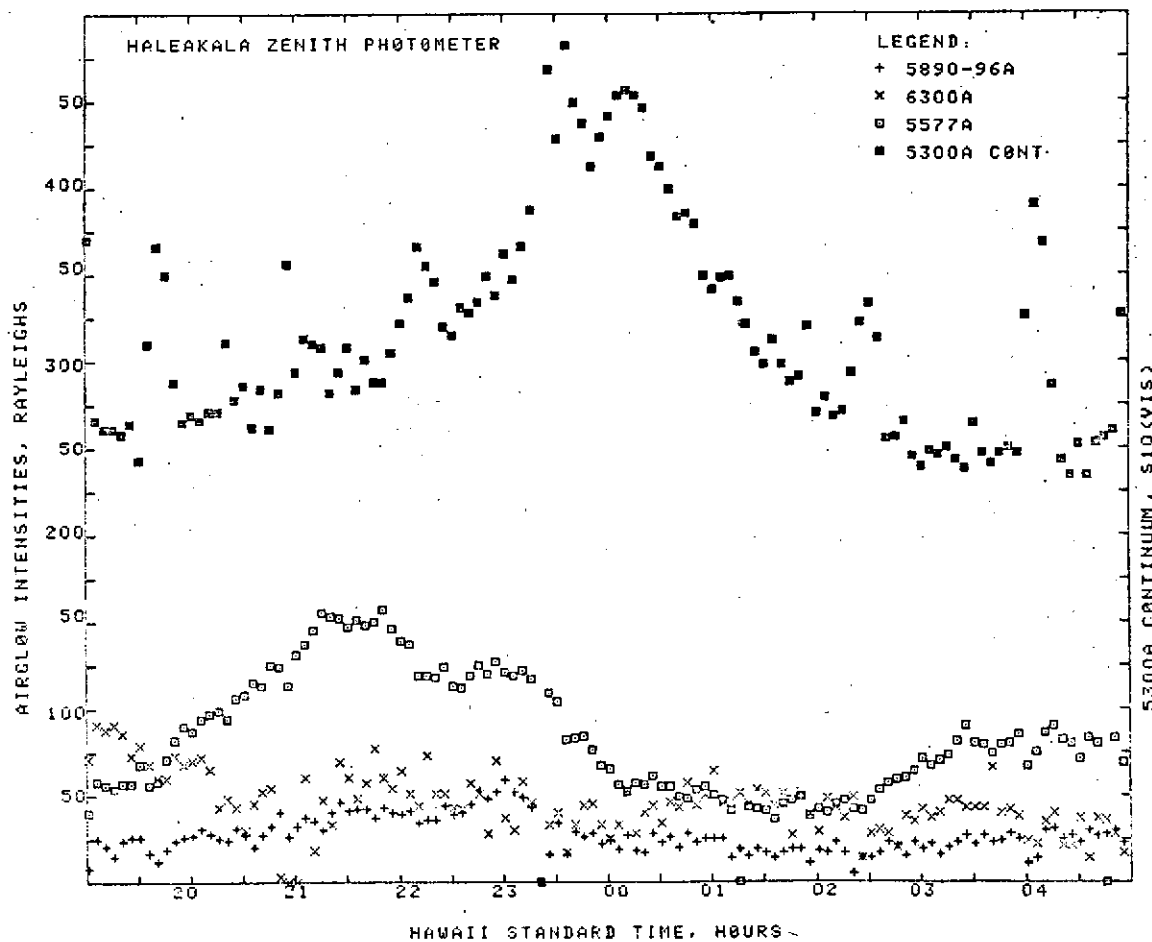




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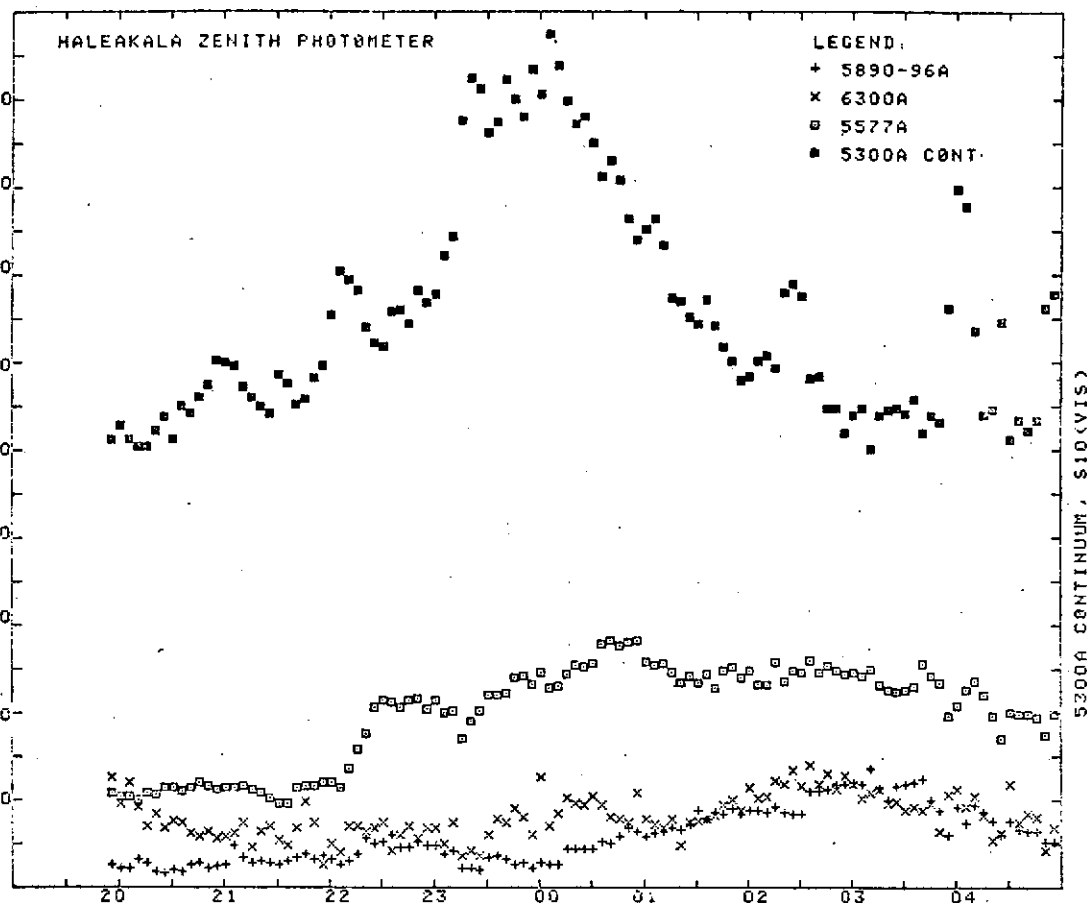


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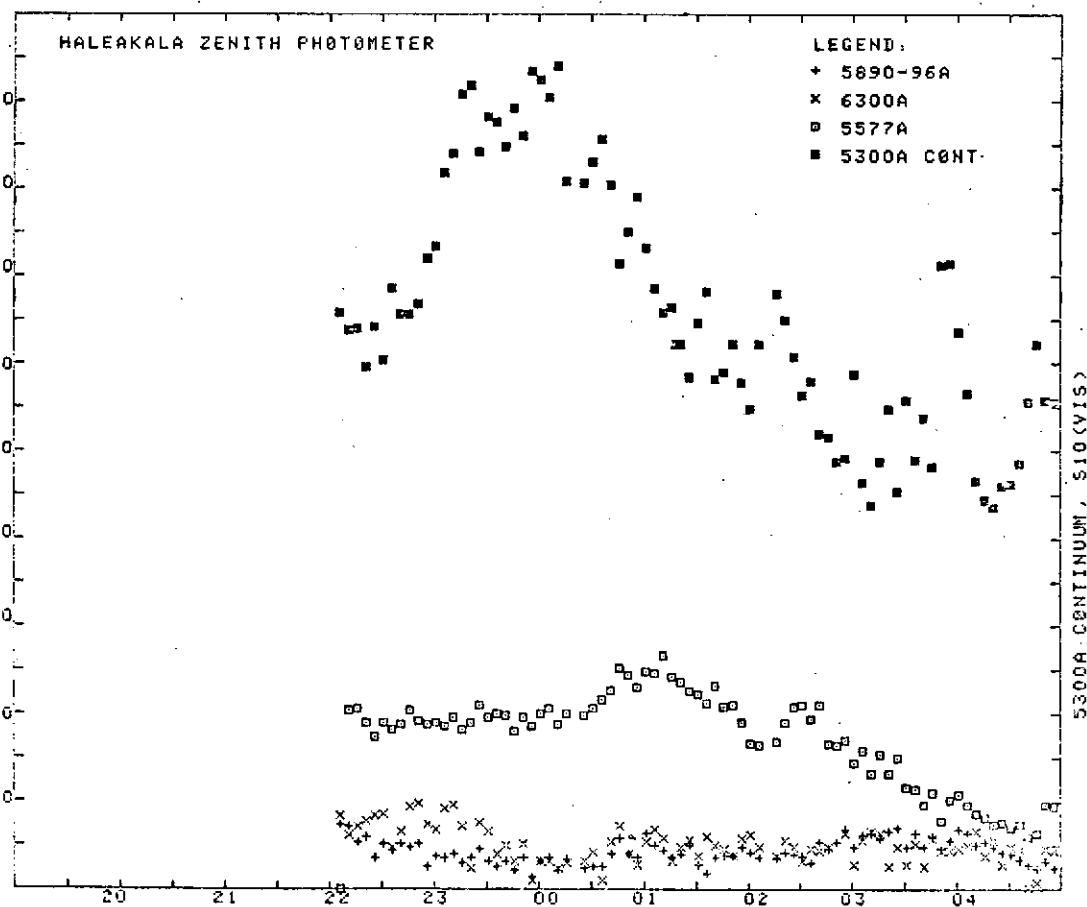
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AIRGLOW INTENSITIES, RAYLEIGHS



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AIRGLOW INTENSITIES, RAYLEIGHS

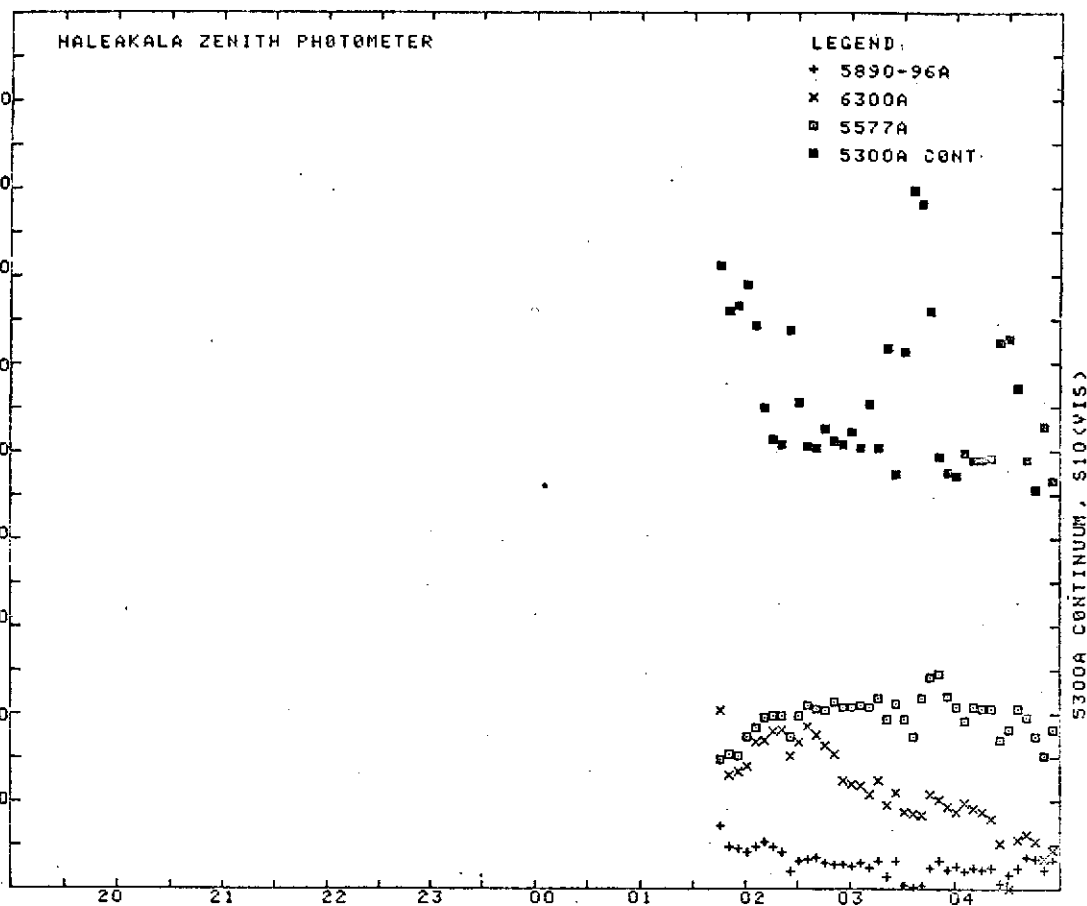


HAWAII STANDARD TIME, HOURS



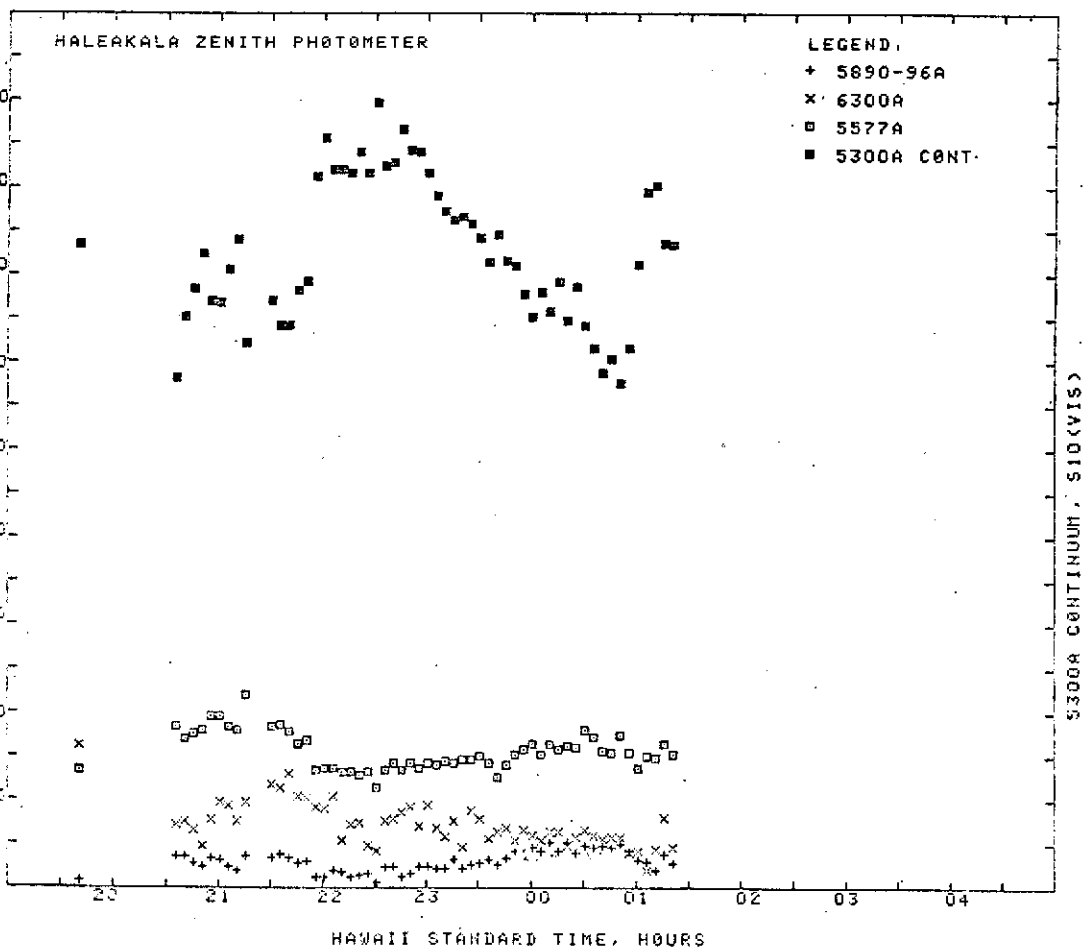
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AIRGLOW INTENSITIES, RAYLEIGHS



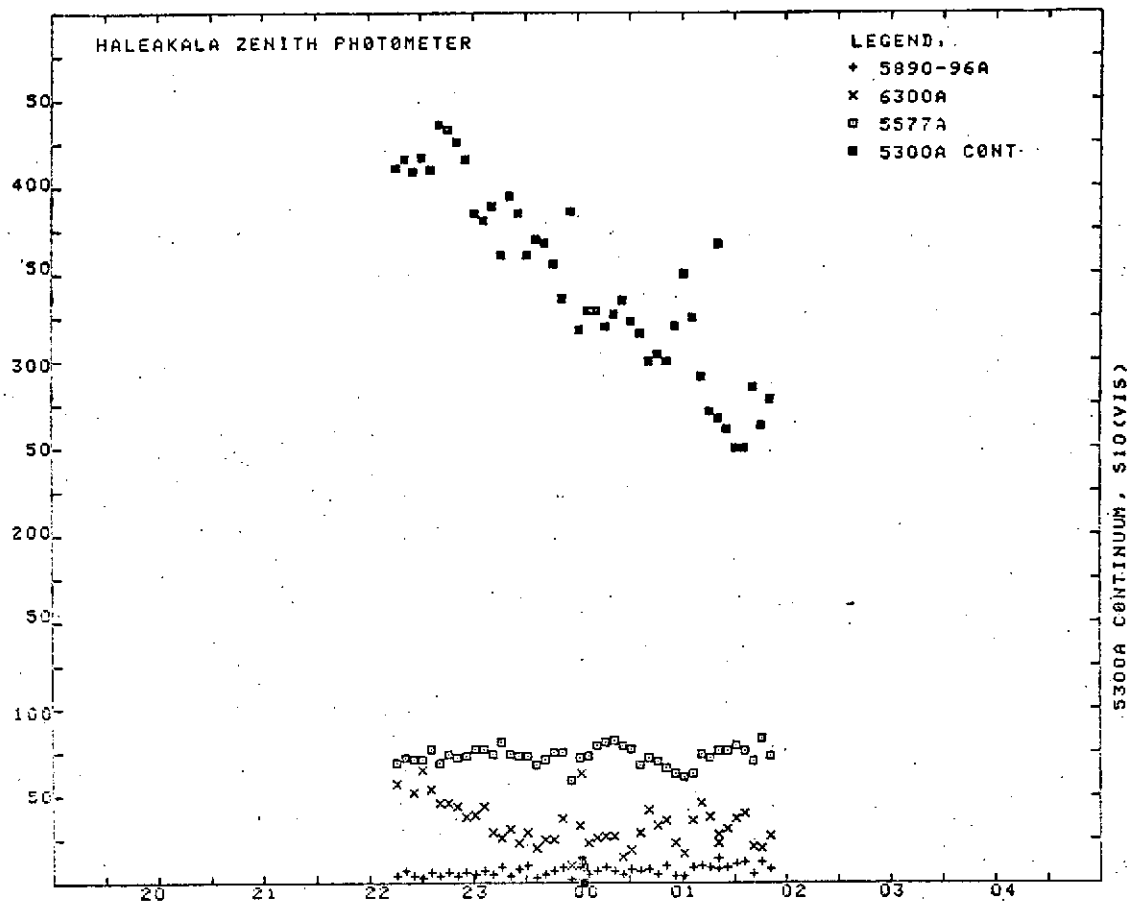
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AIRGLOW INTENSITIES, RAYLEIGHS



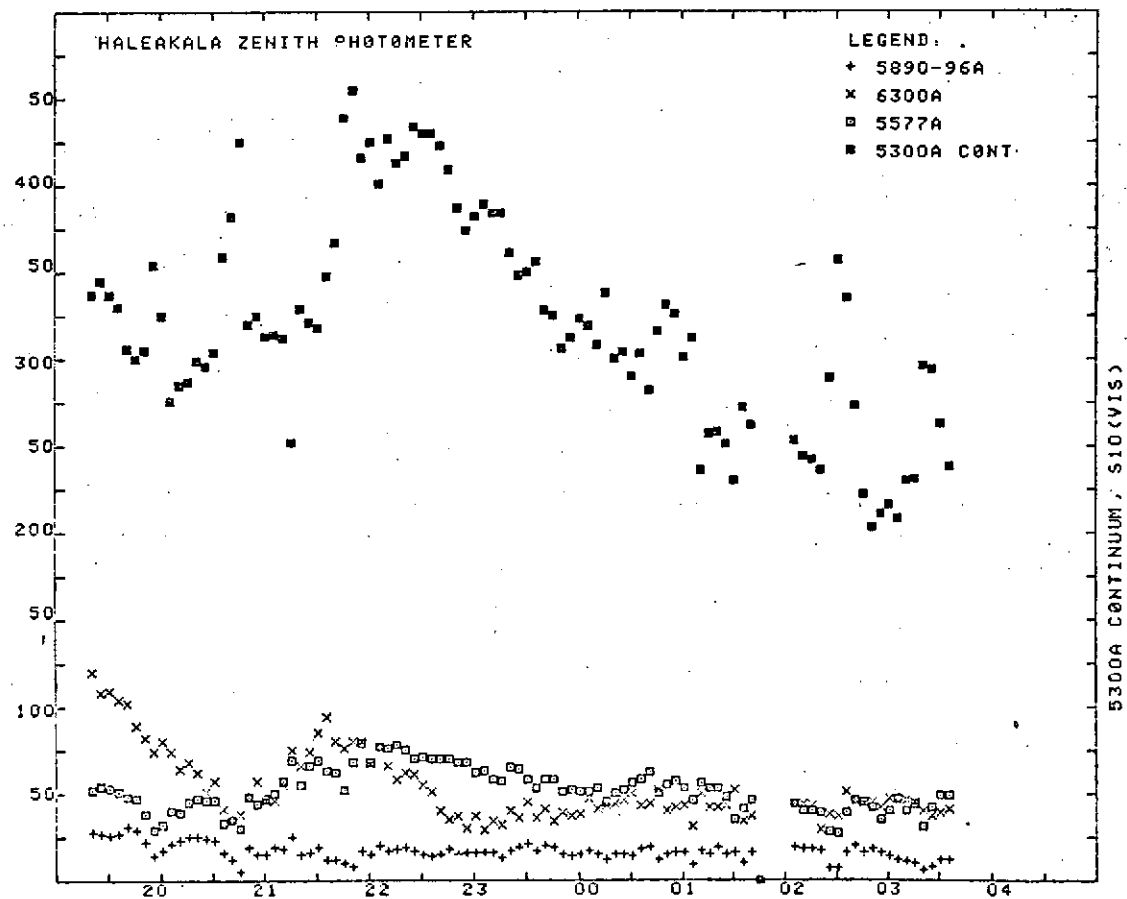
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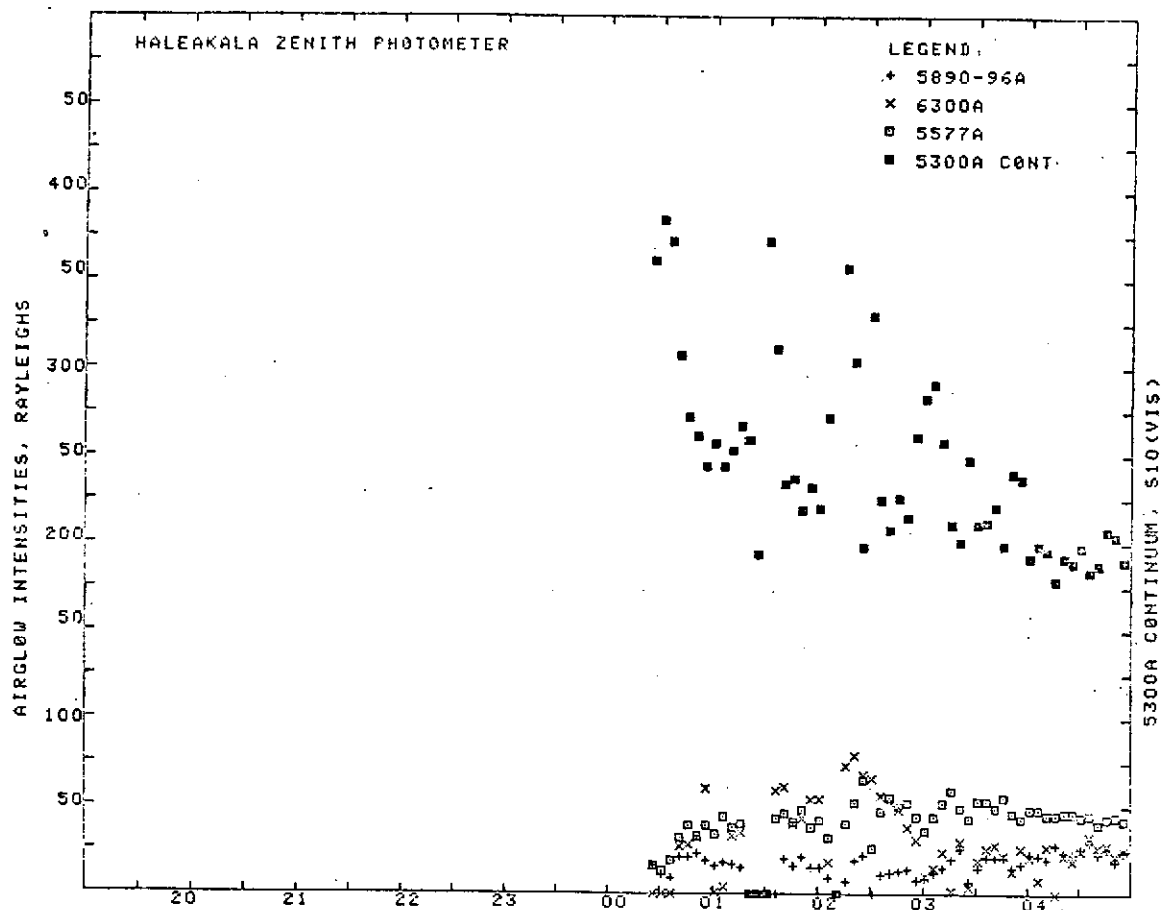
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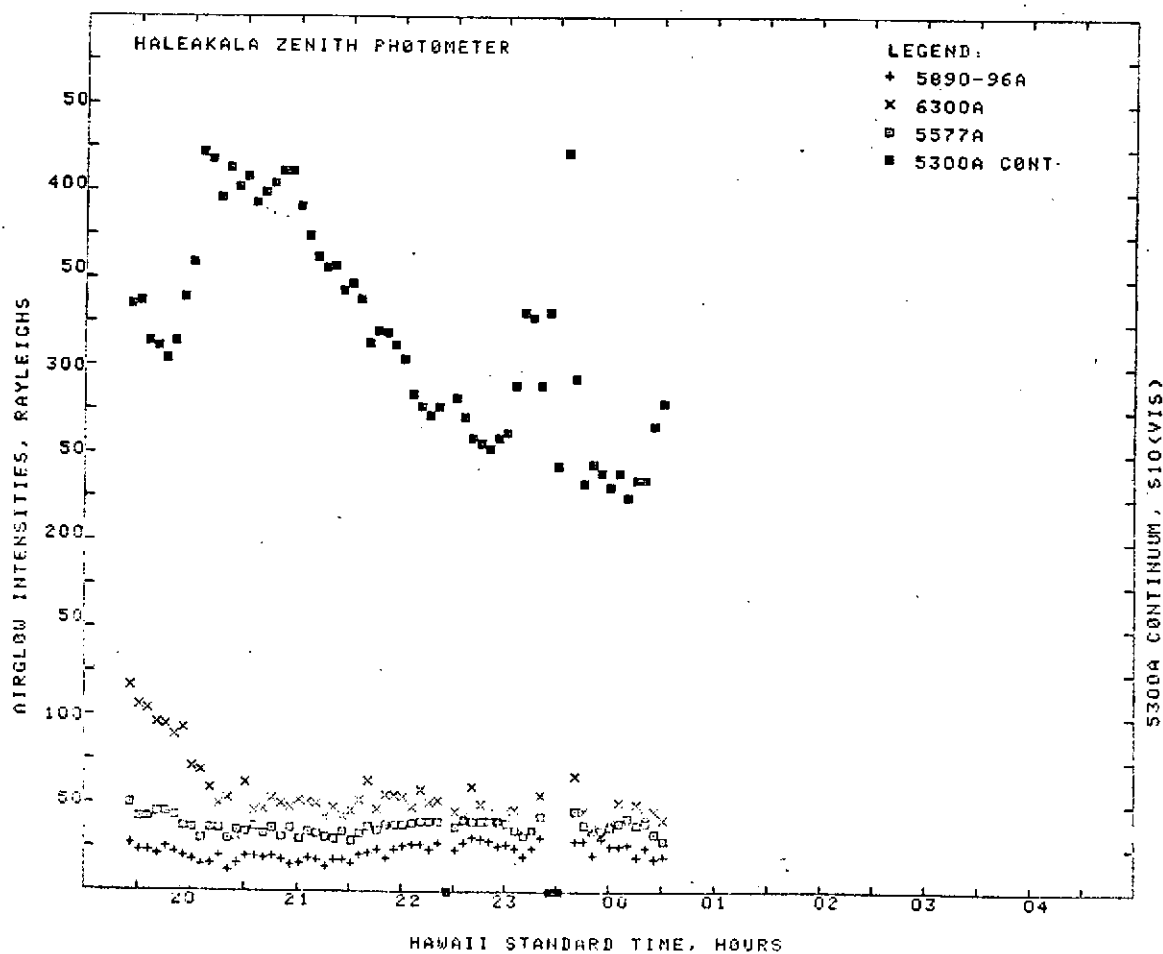


HAWAII STANDARD TIME, HOURS

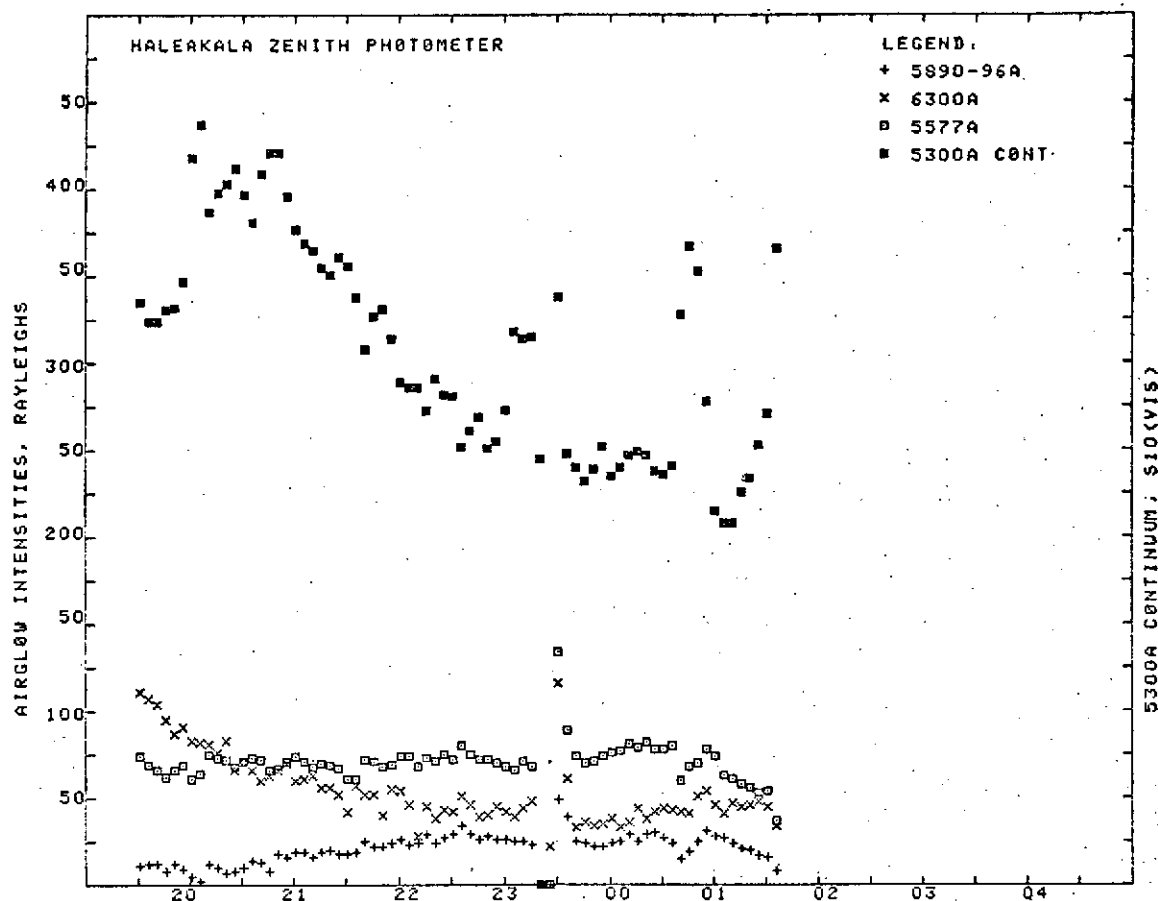
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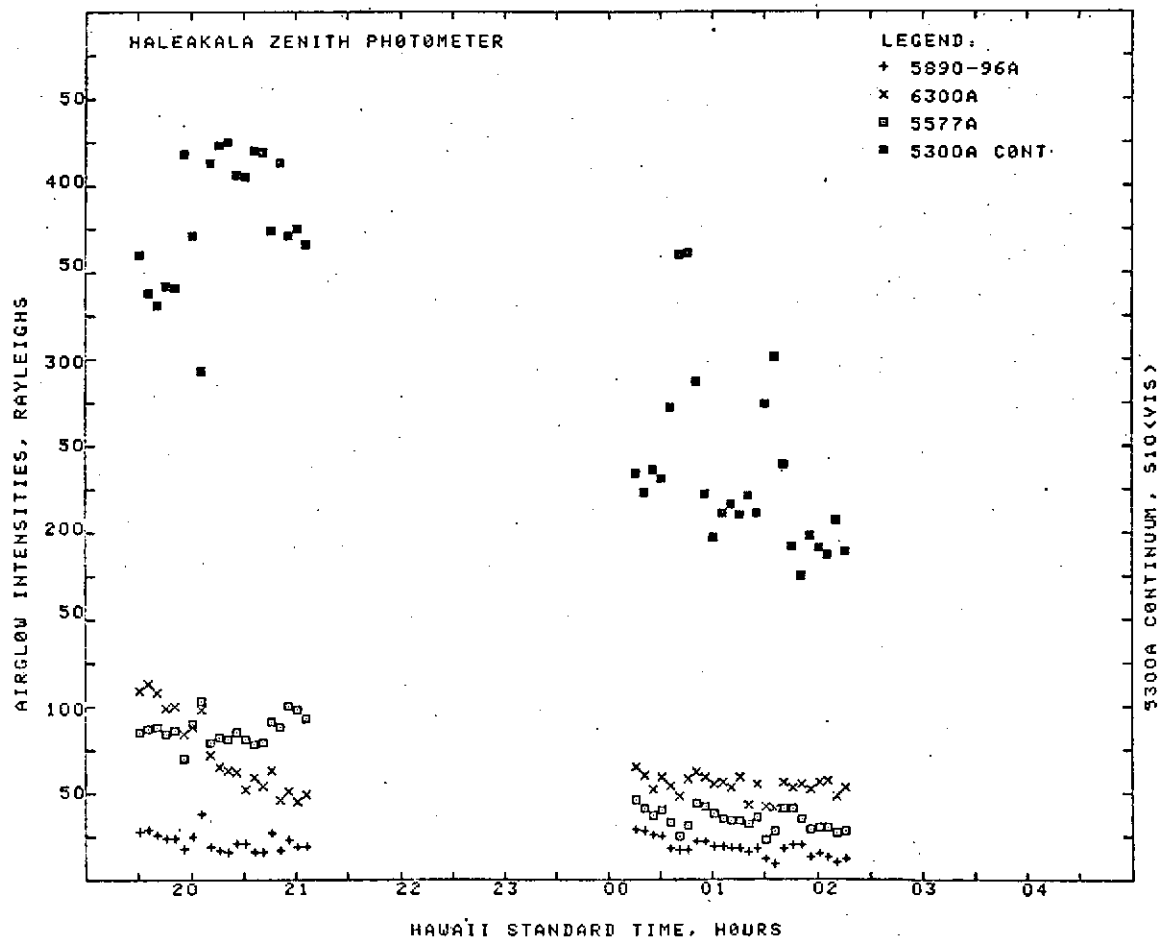
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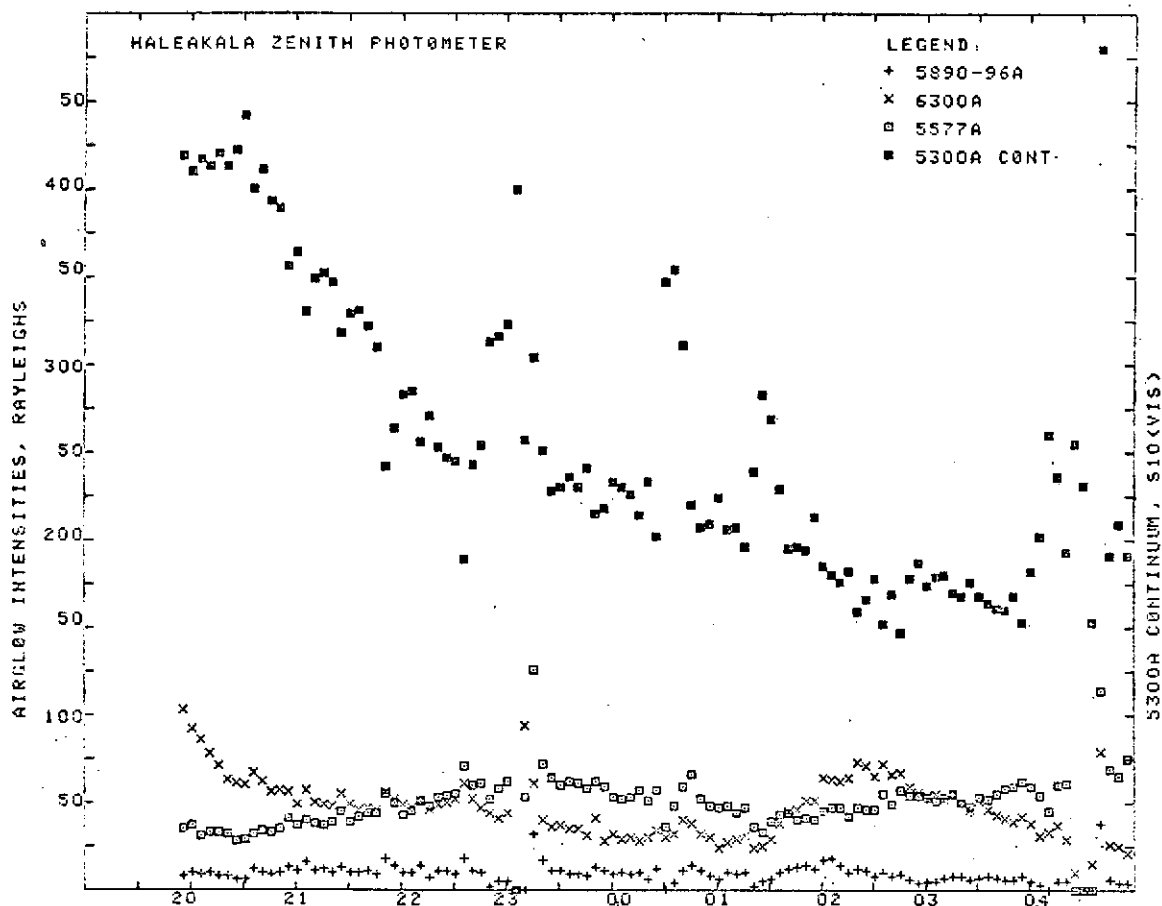


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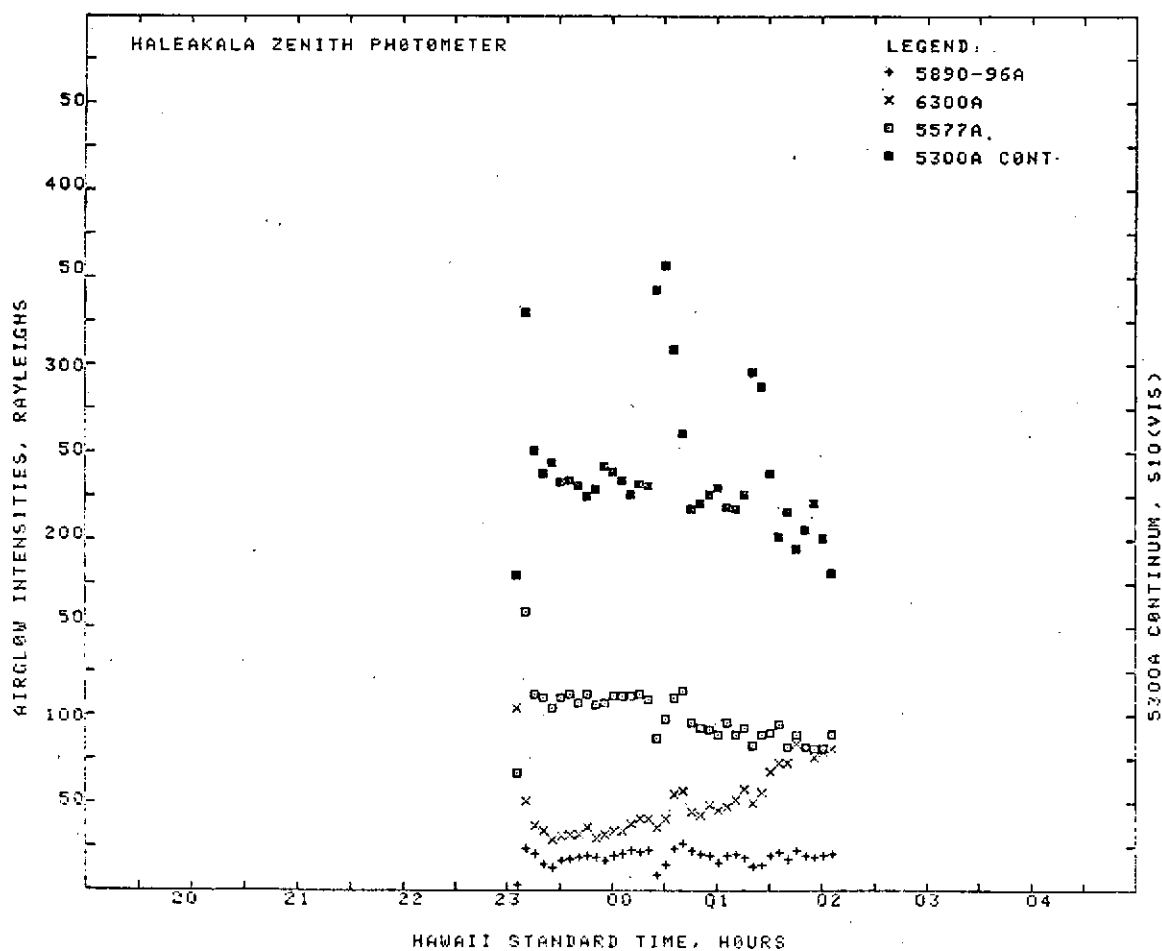




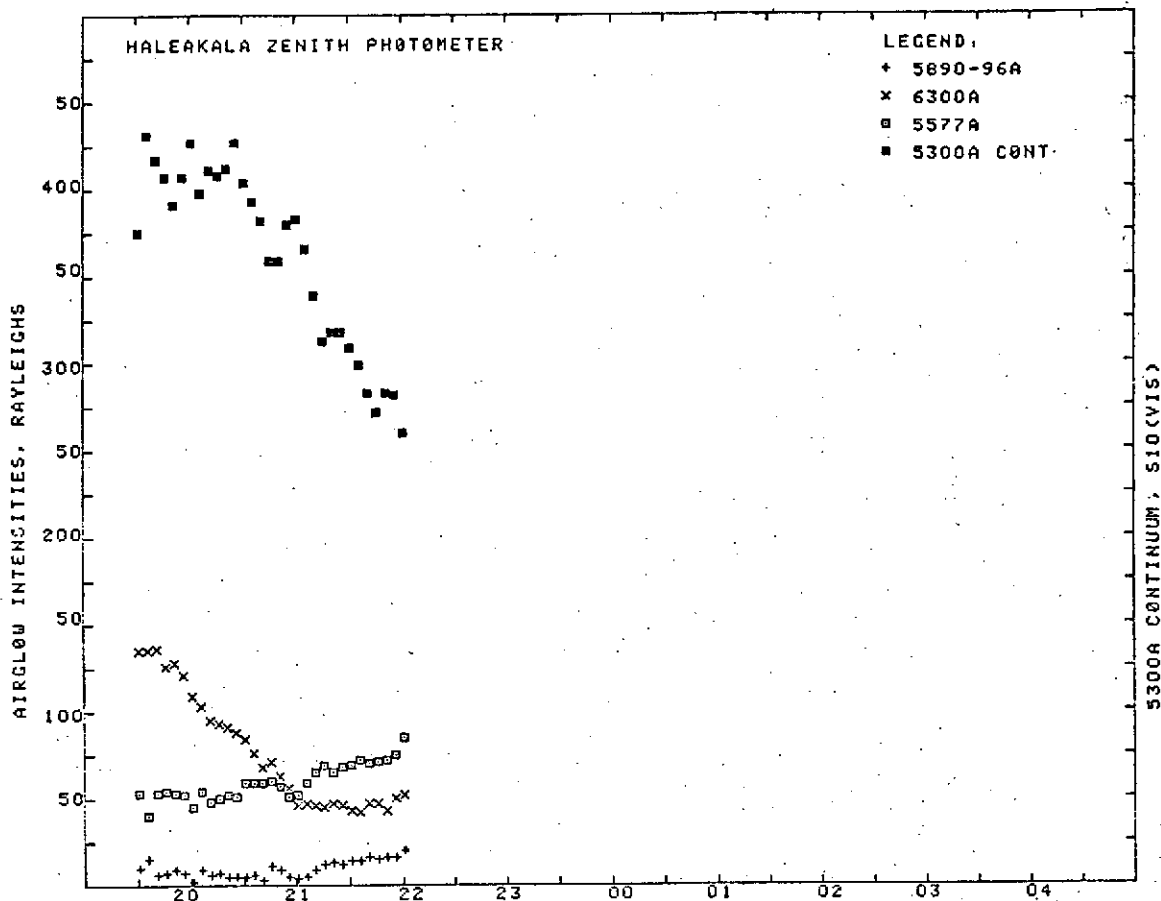
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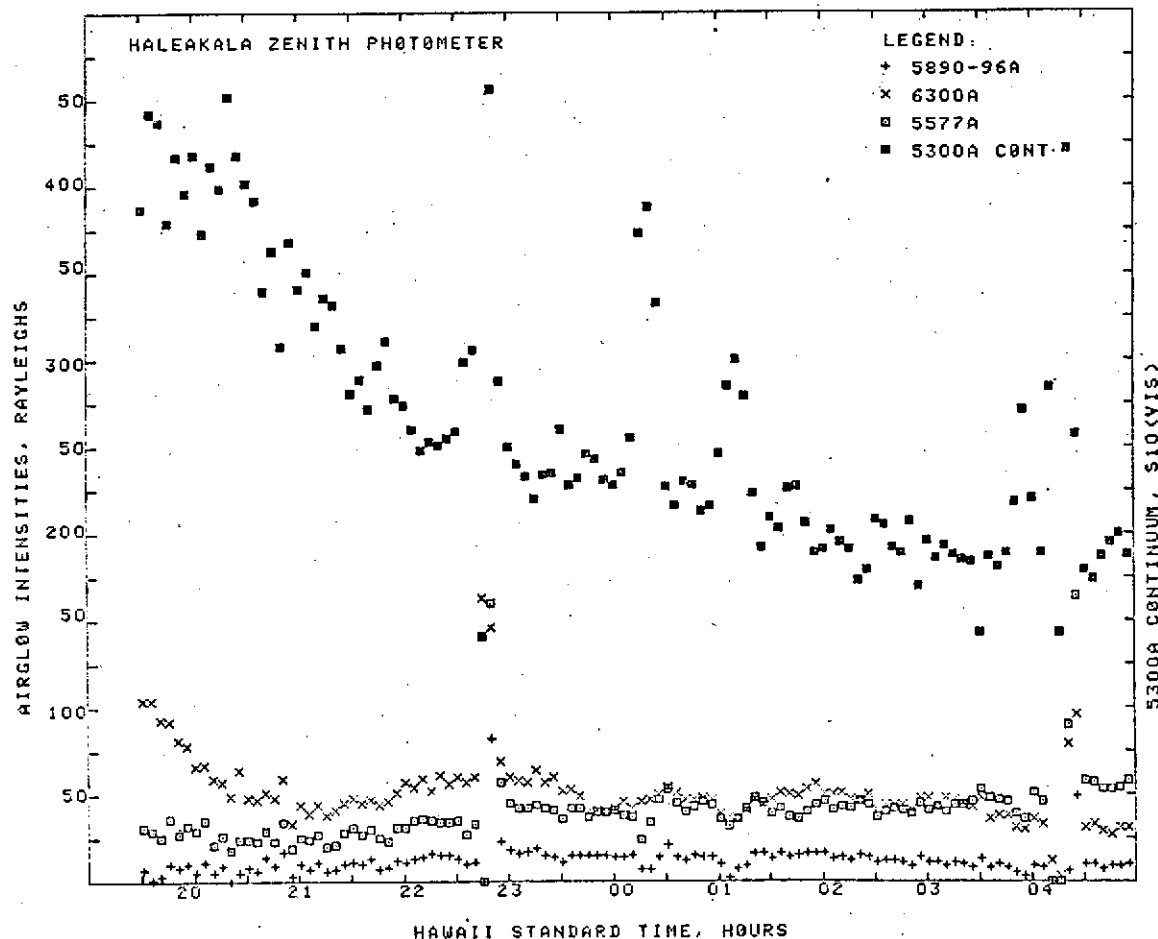
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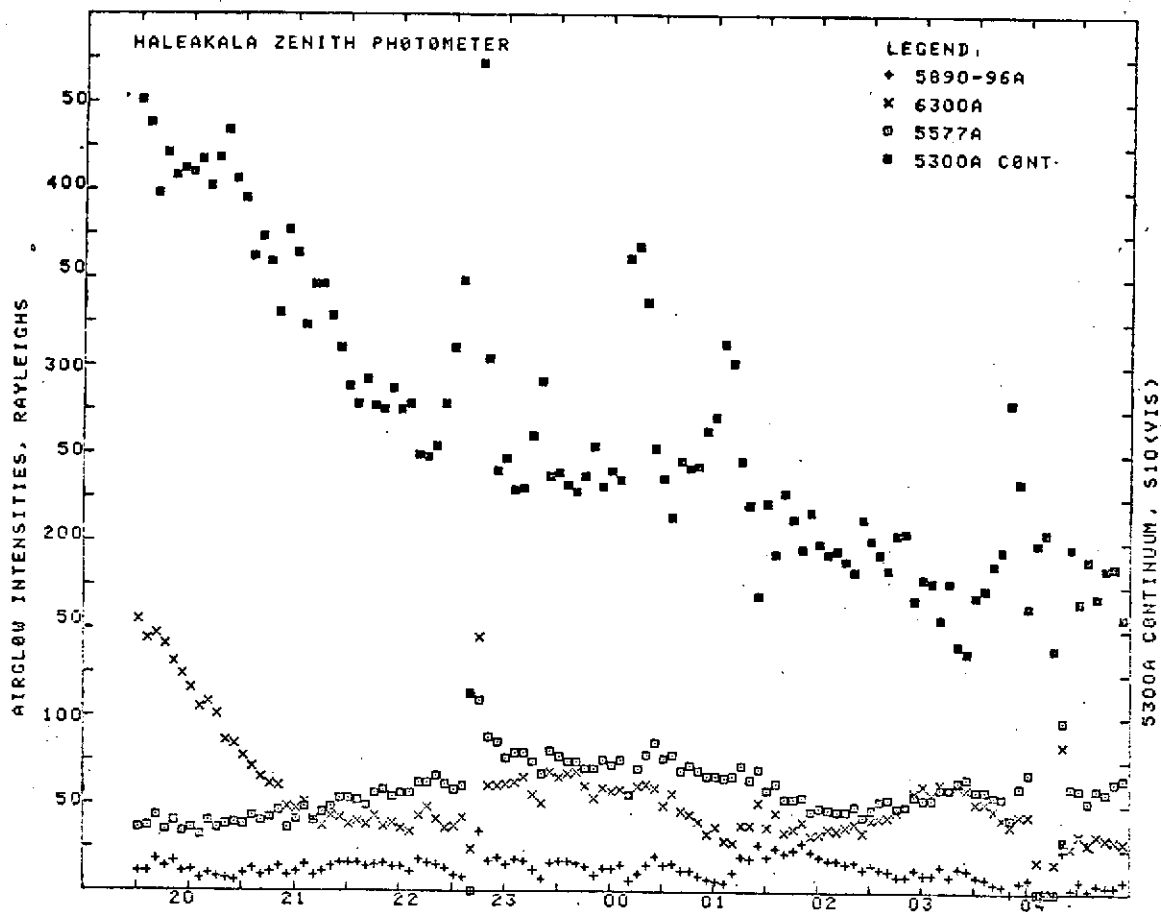
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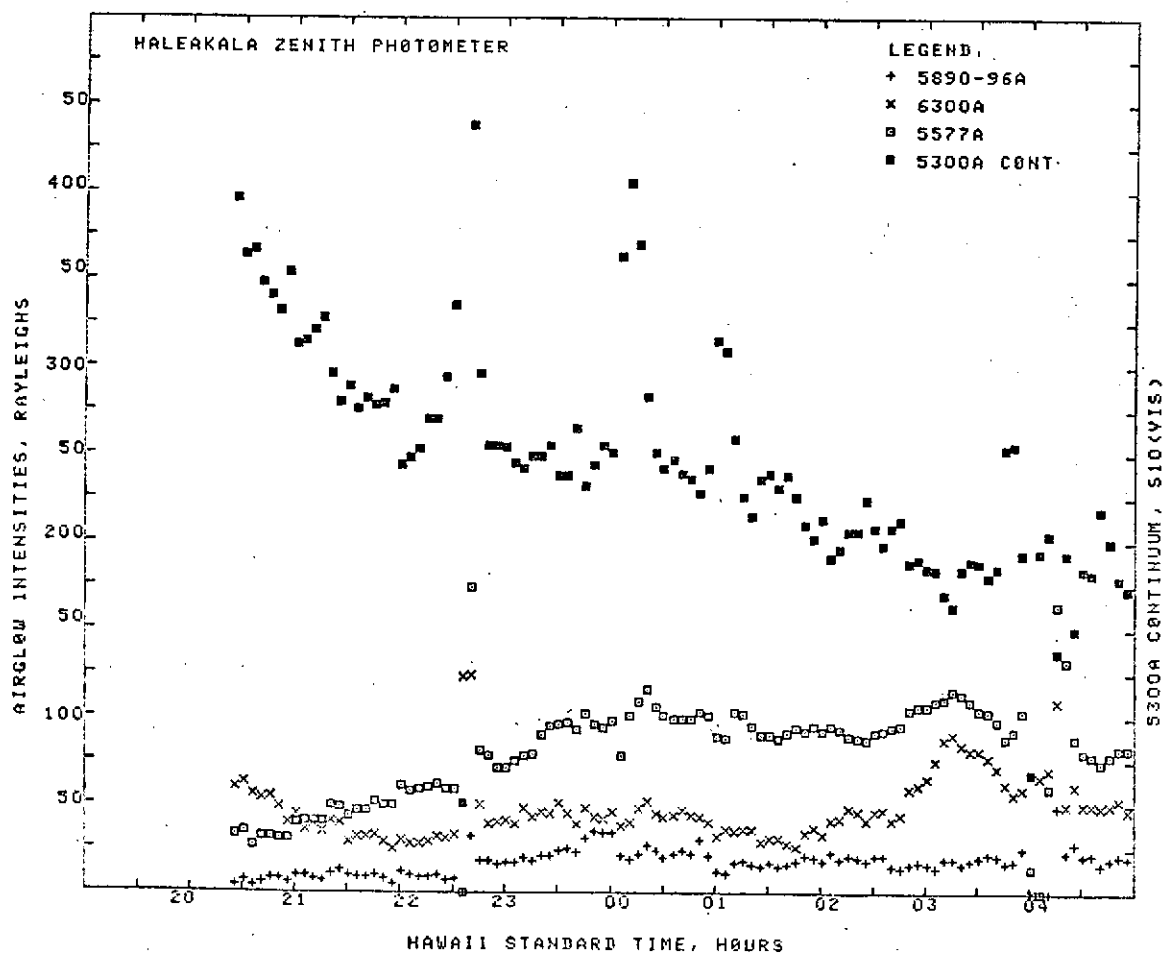
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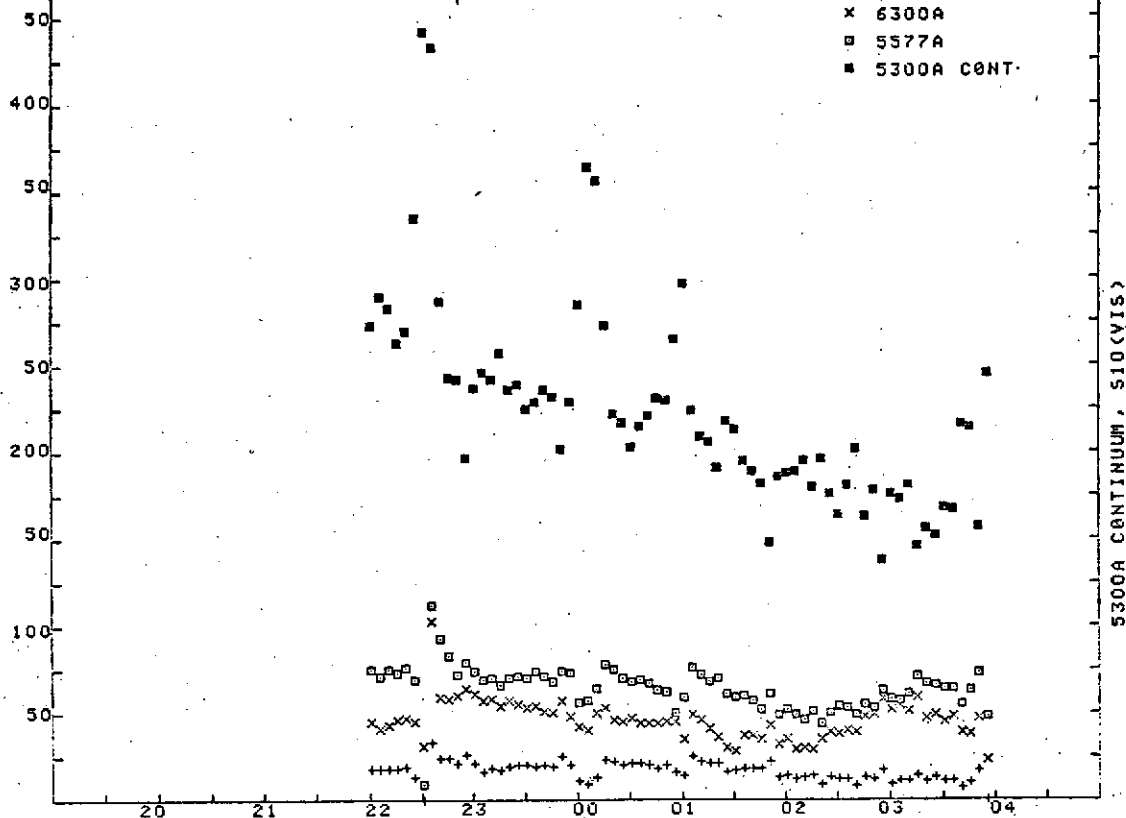


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AIRCLOW INTENSITIES, RAYLEIGHS

# HALEAKALA ZENITH PHOTOMETER

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+ 5890-96A  
x 6300A  
□ 5577A  
■ 5300A CONT.

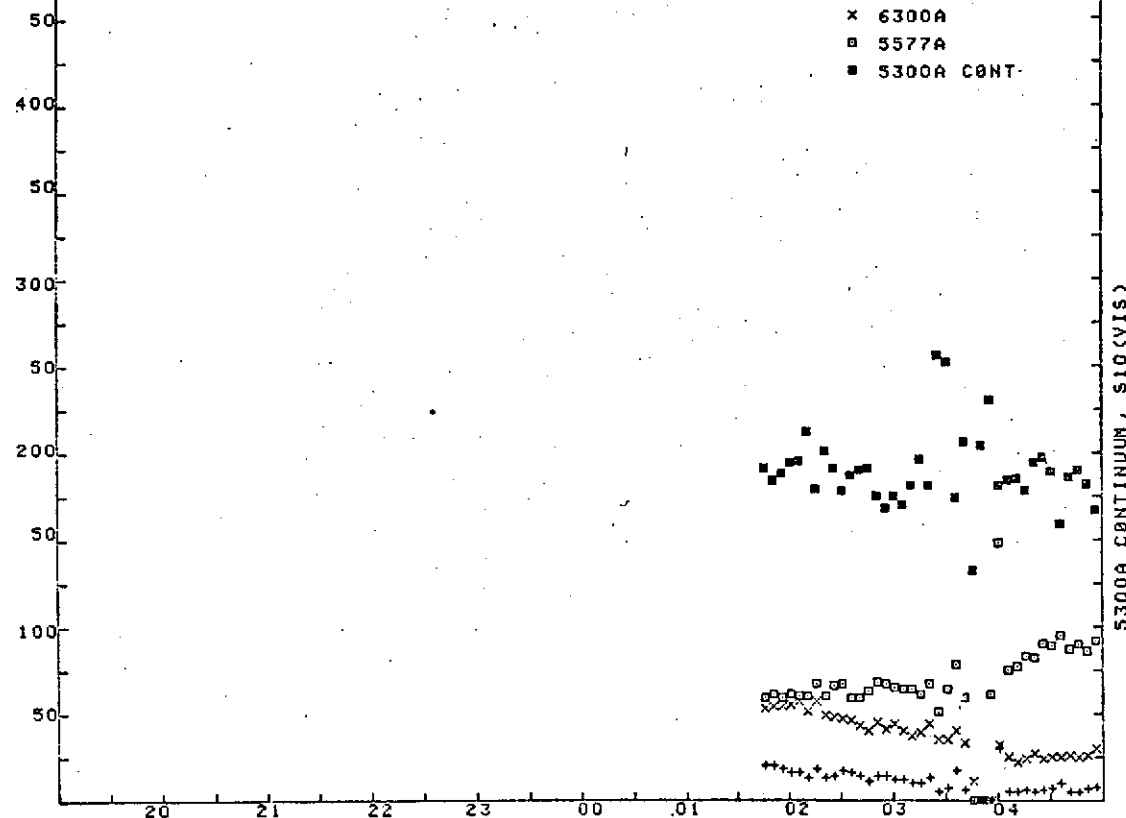


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AIRCLOW INTENSITIES, RAYLEIGHS

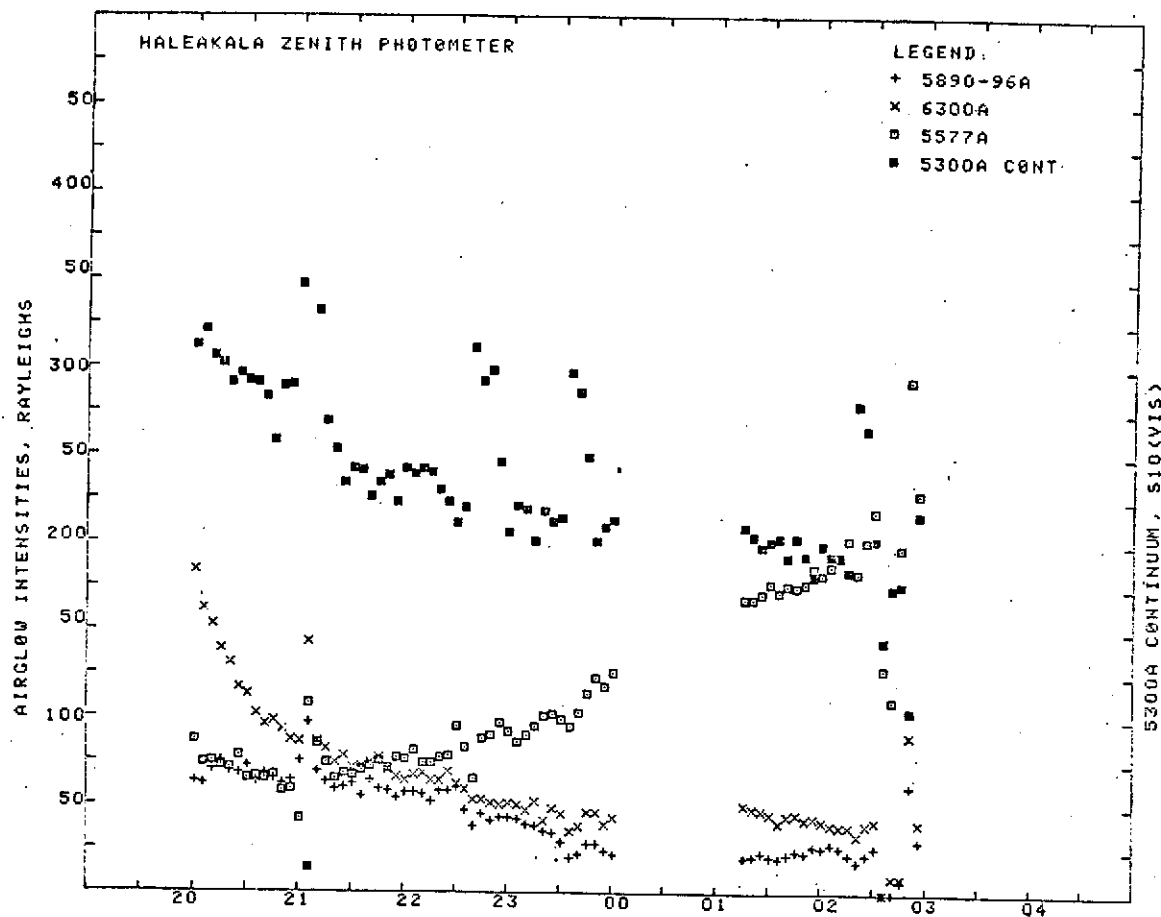
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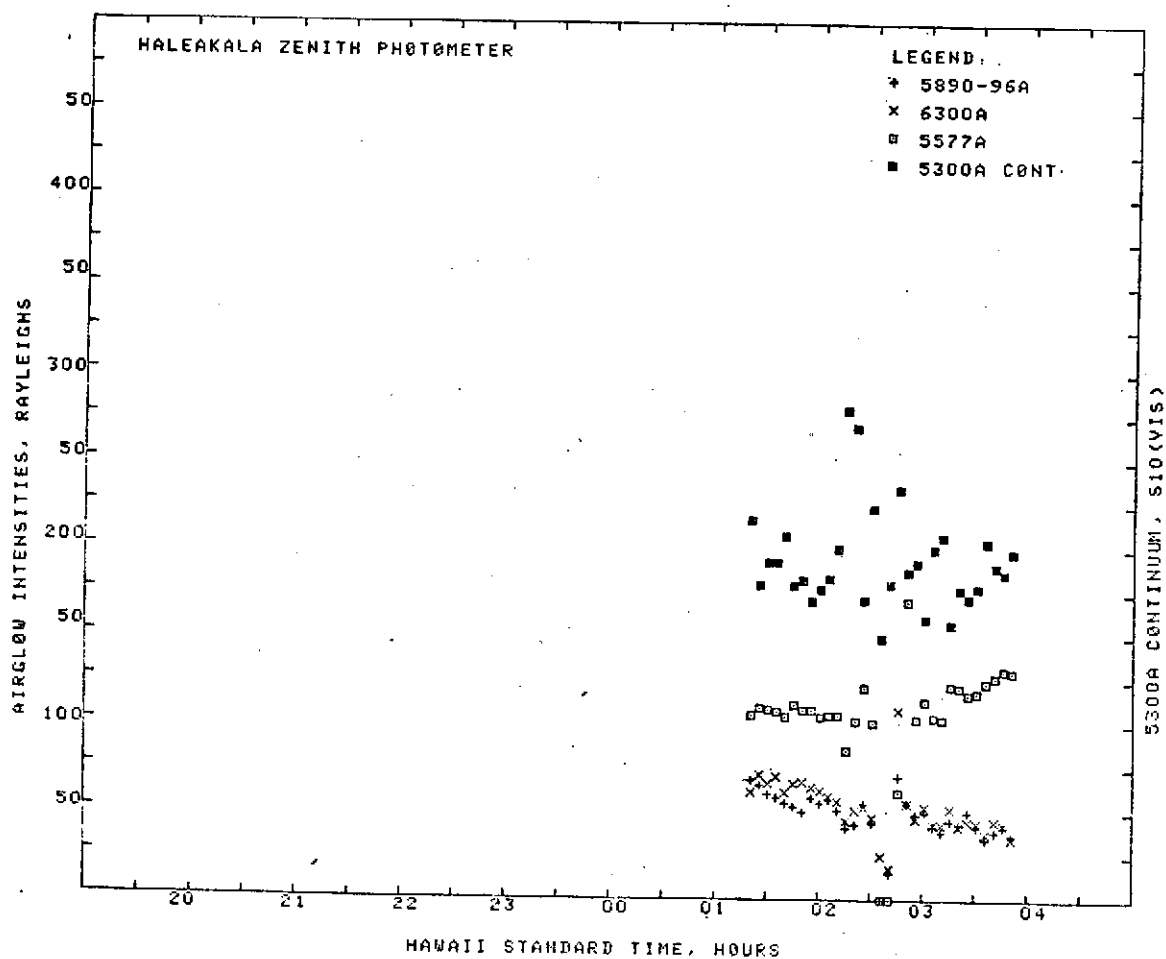


HAWAII STANDARD TIME, HOURS

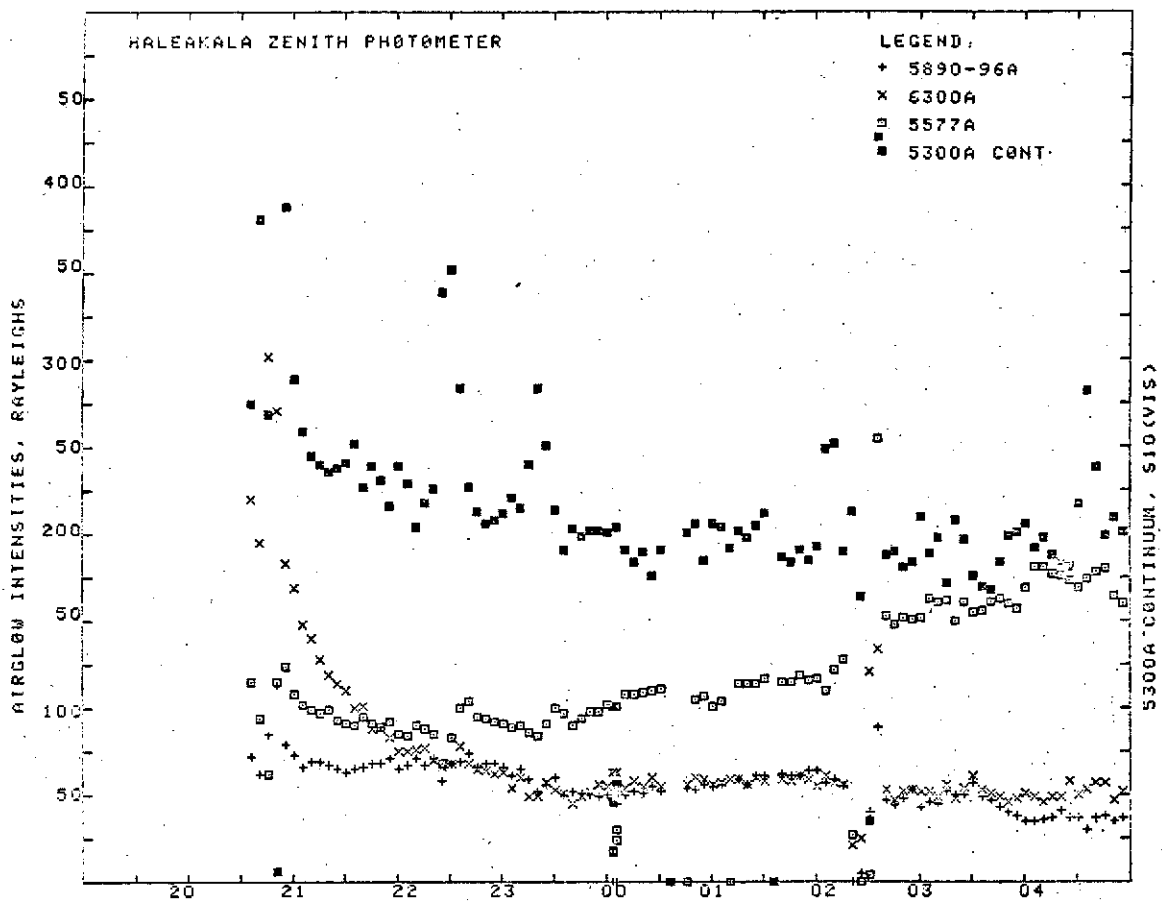
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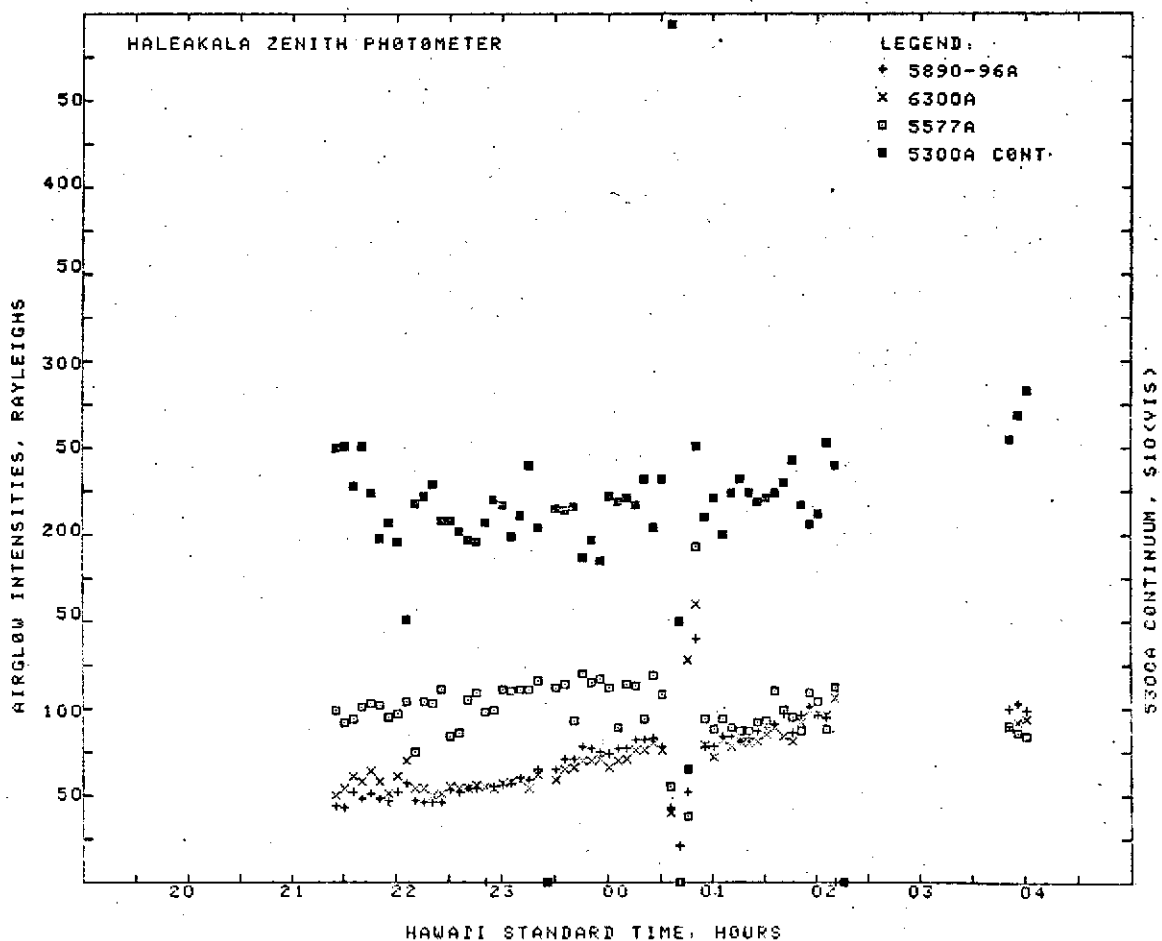
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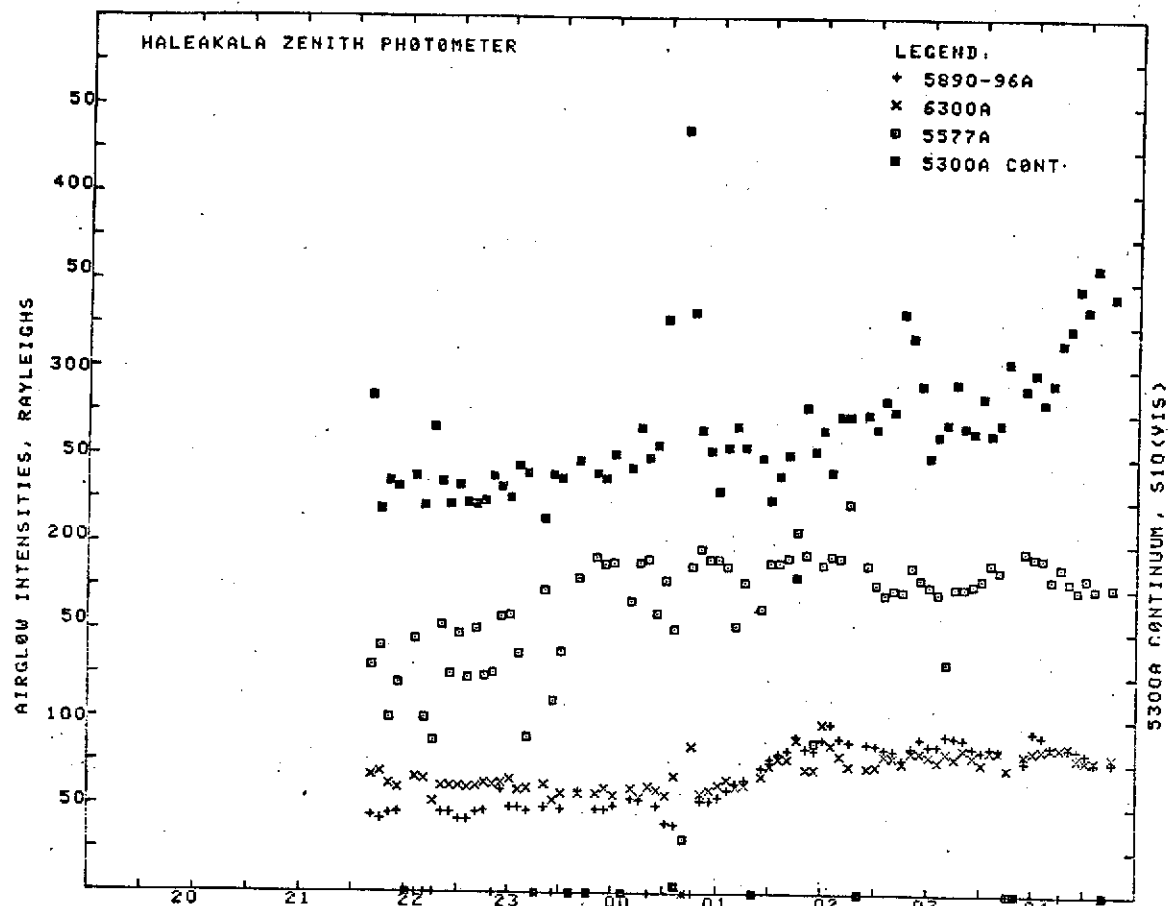
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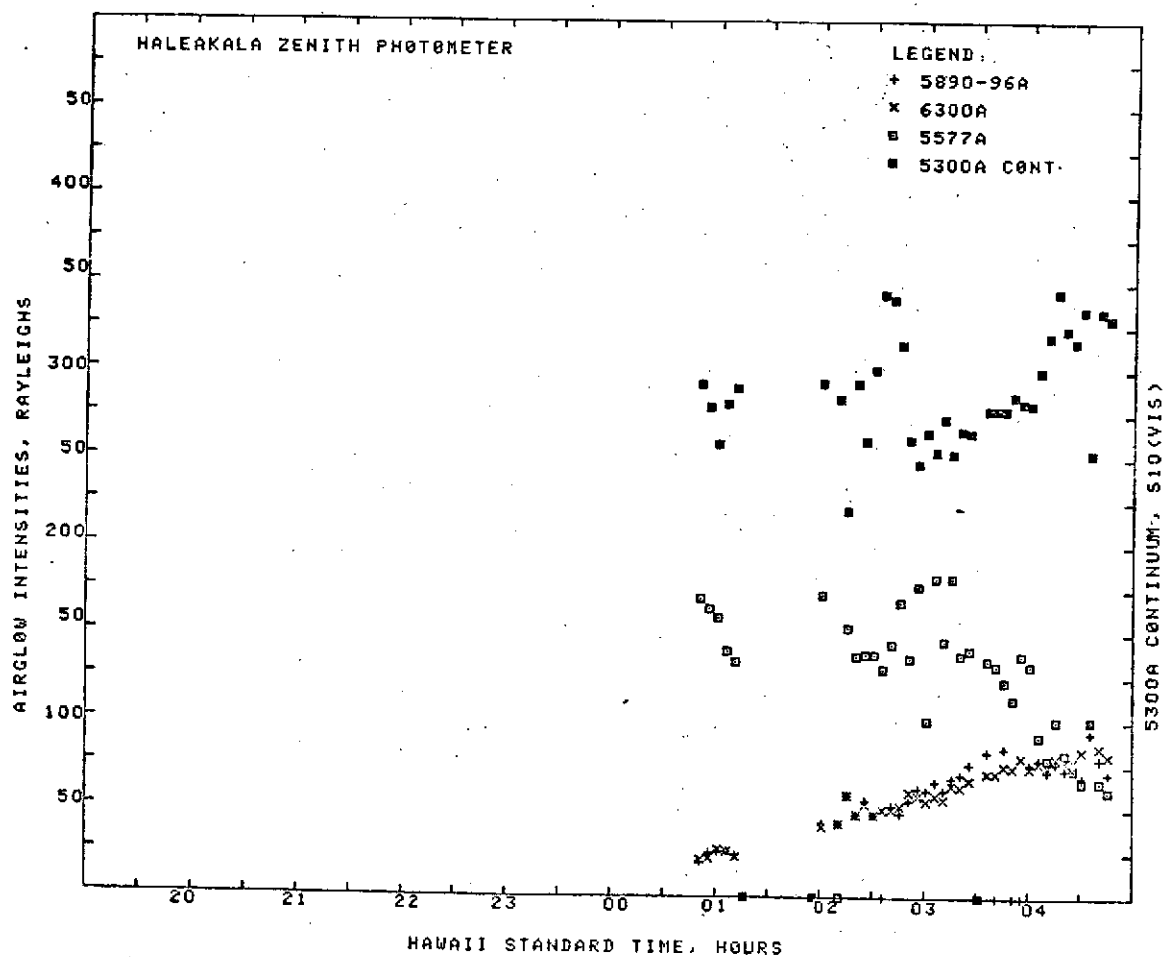
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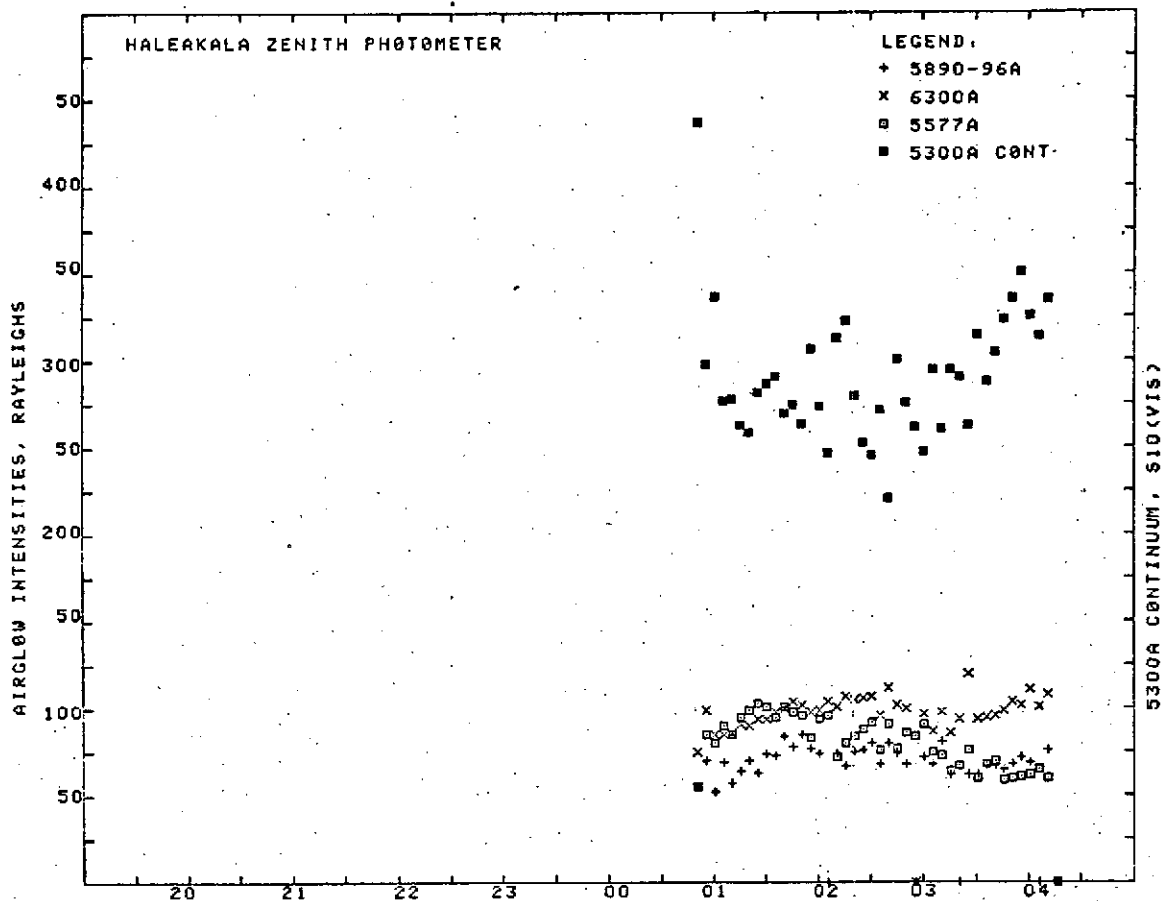
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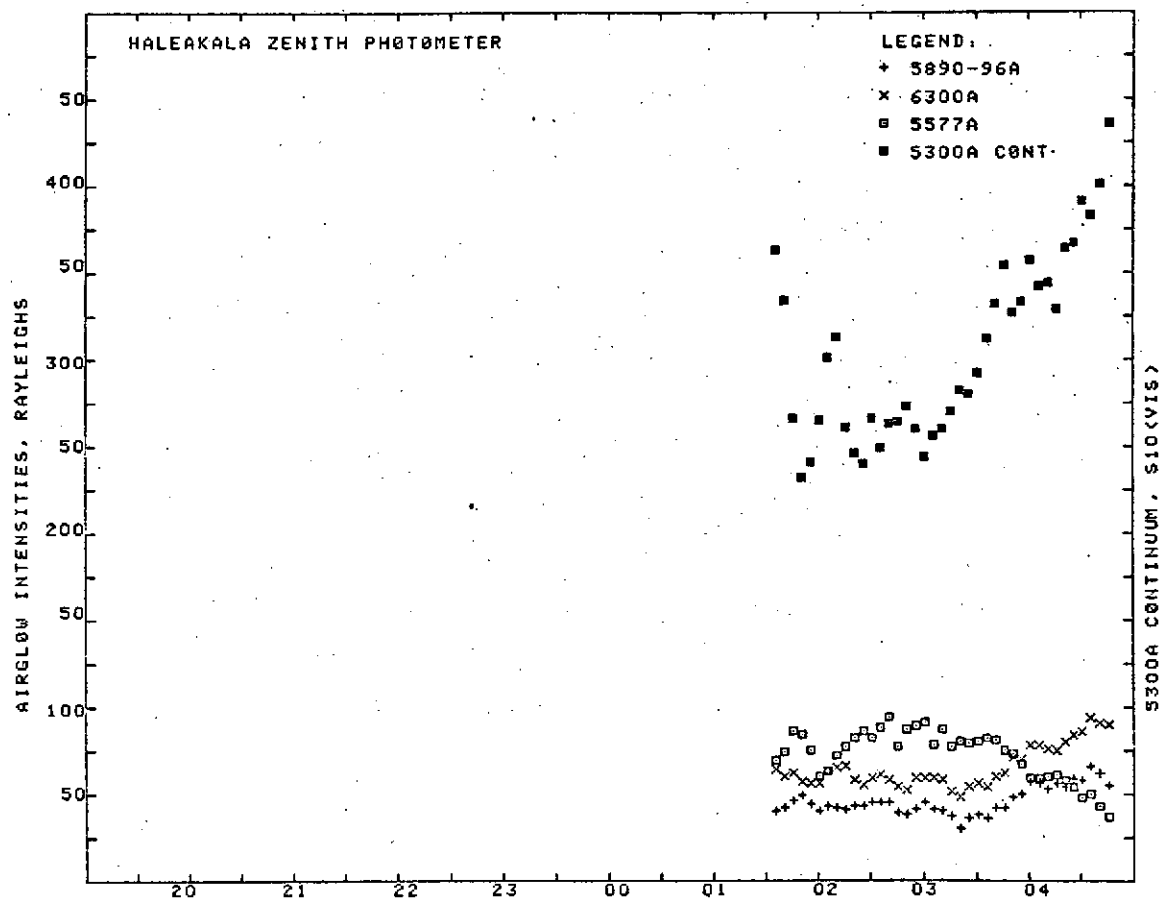
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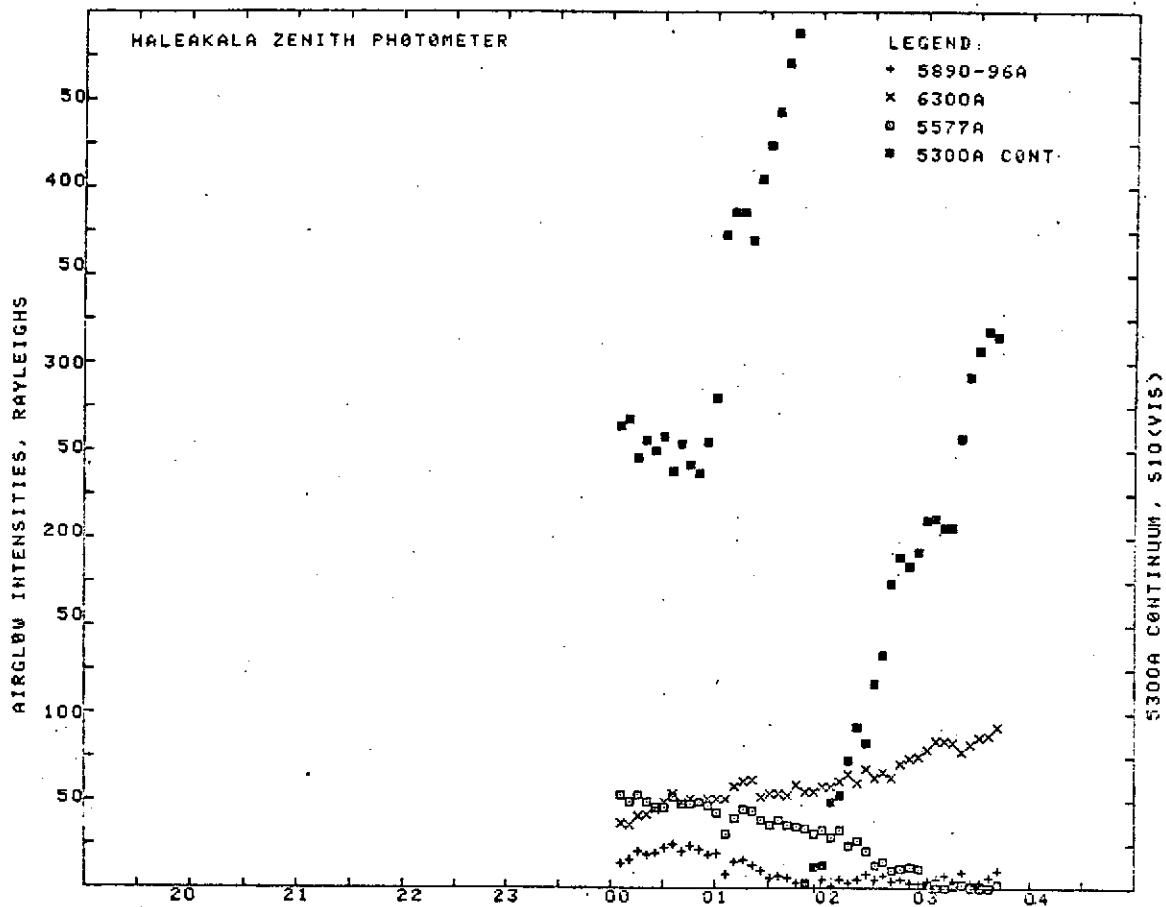
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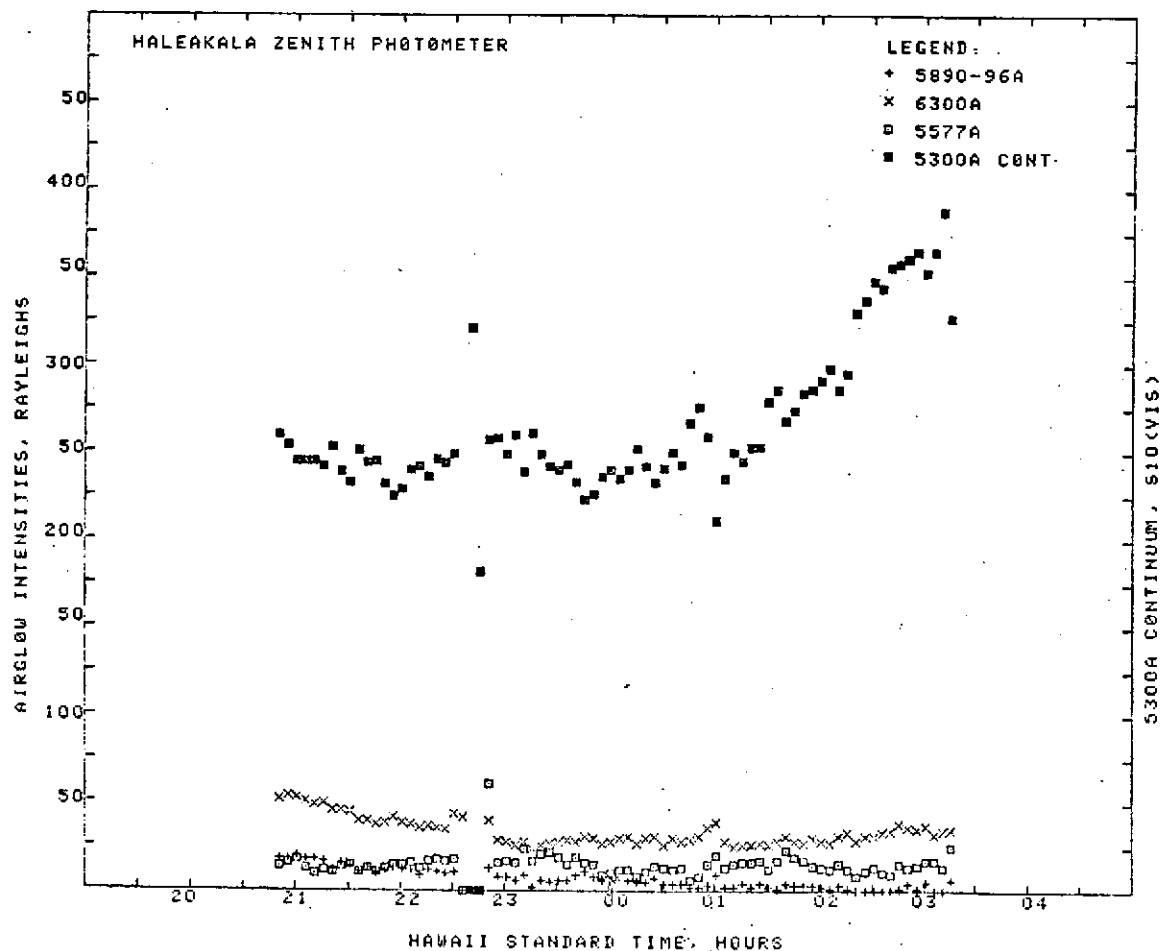
HAWAII STANDARD TIME, HOURS



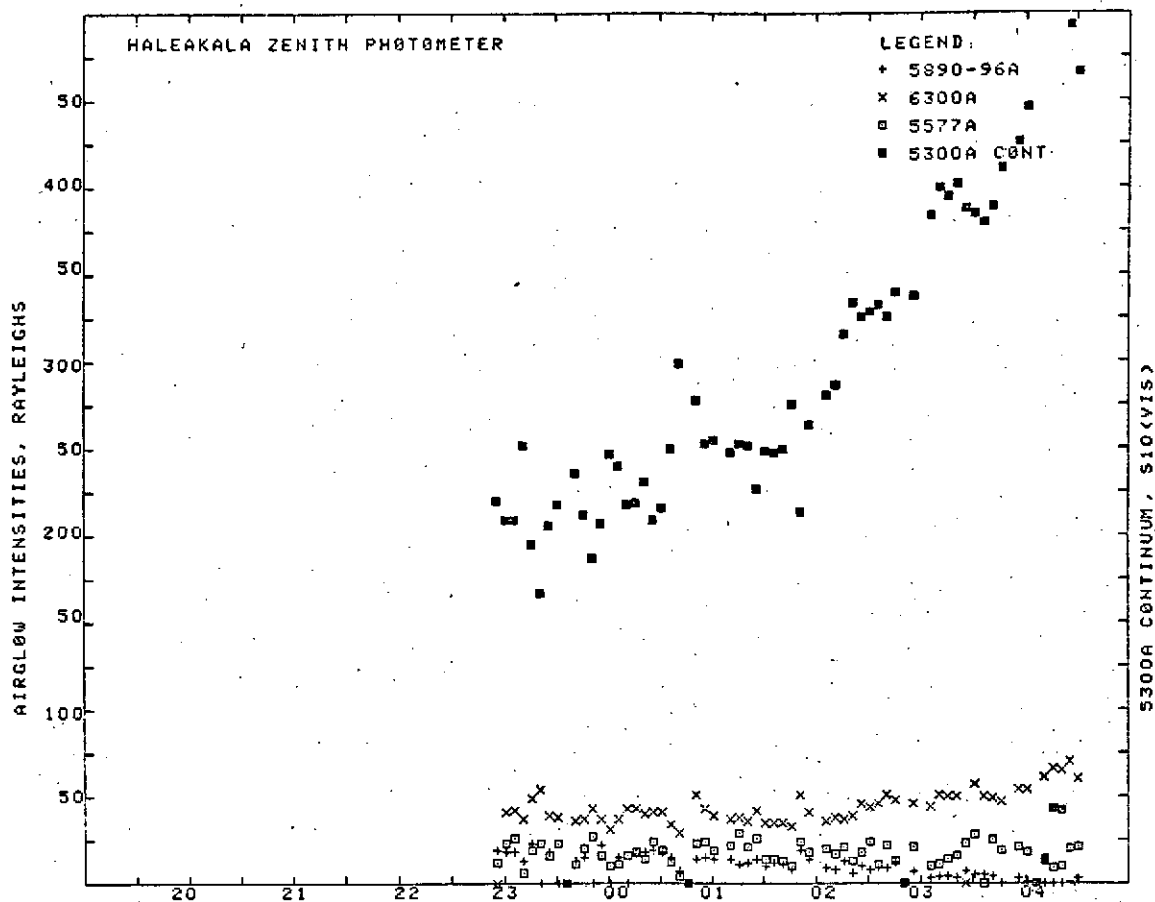
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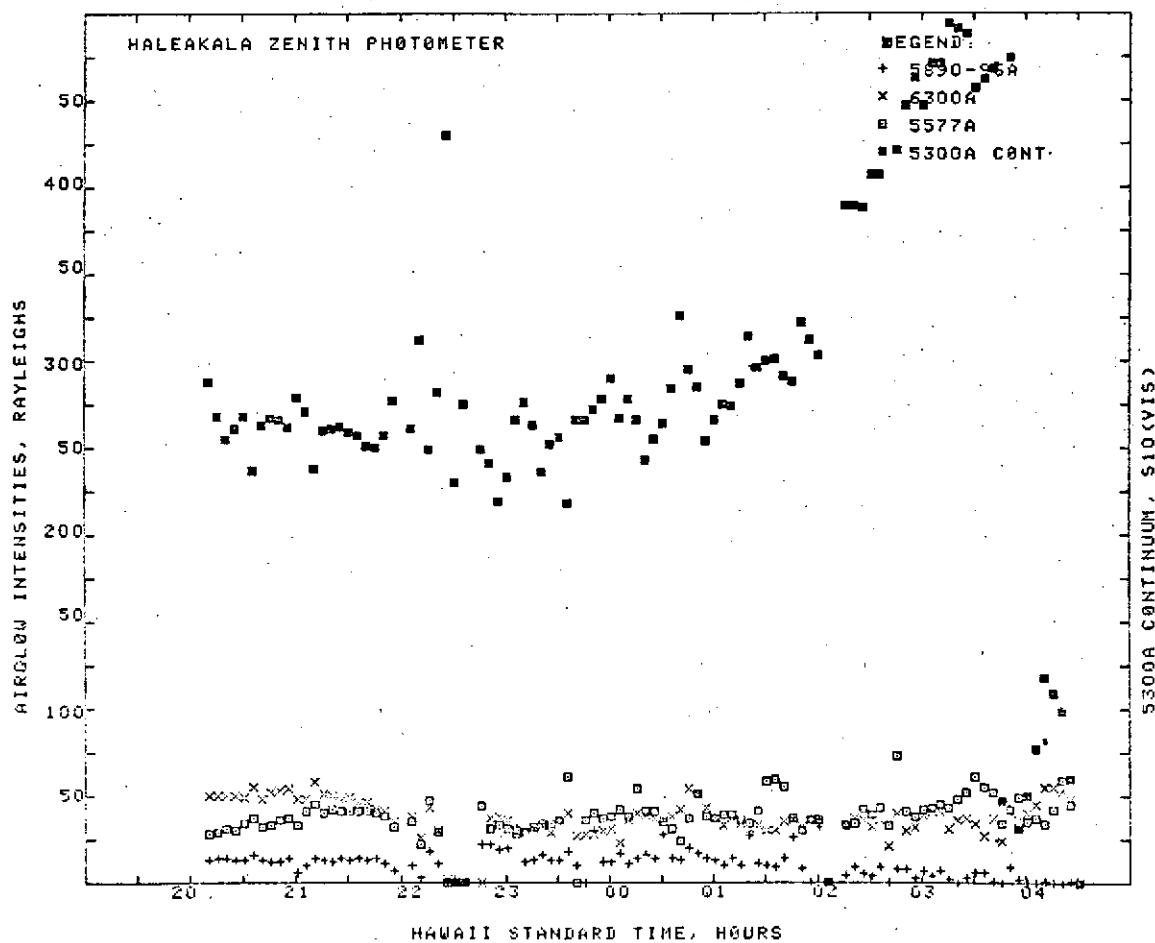
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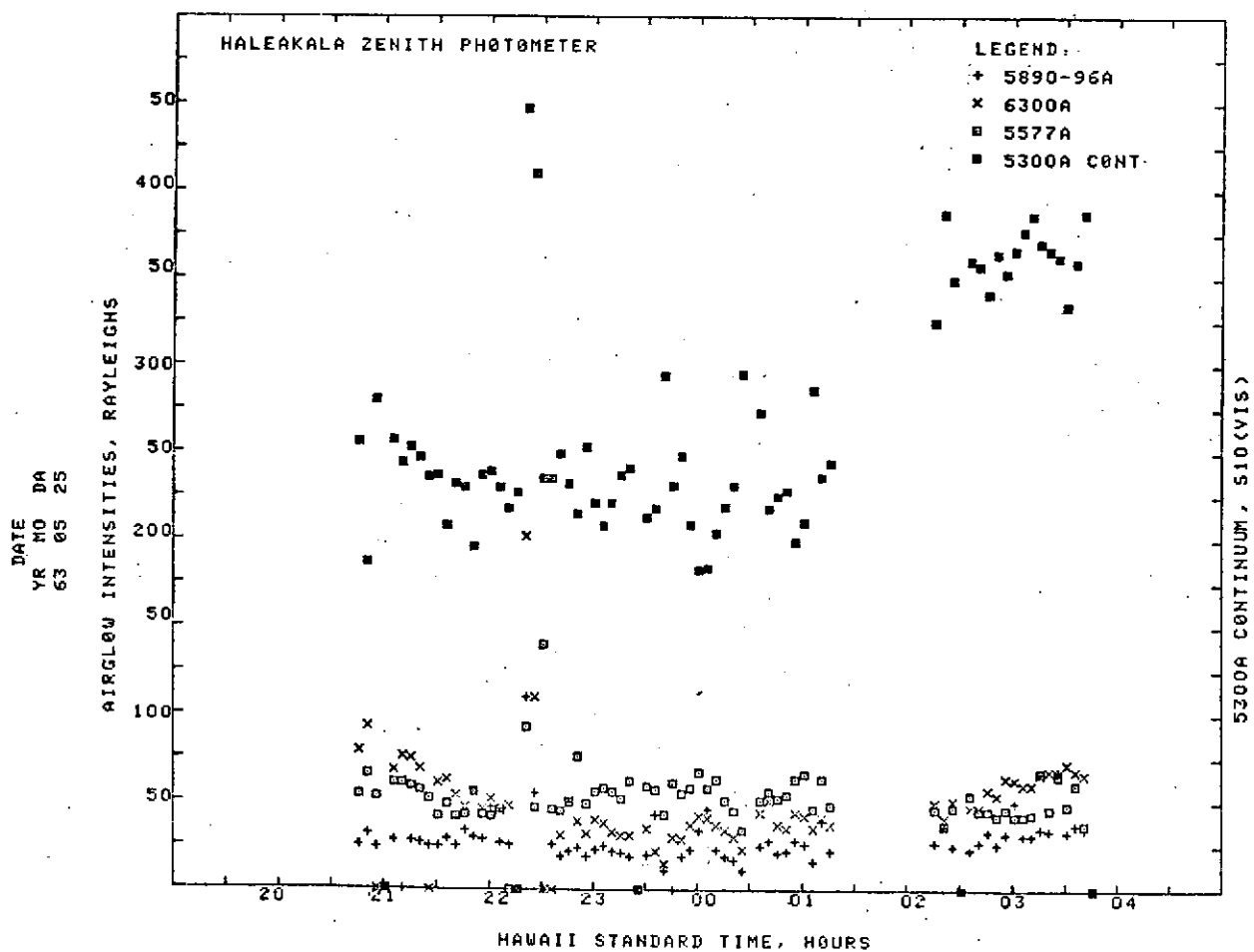
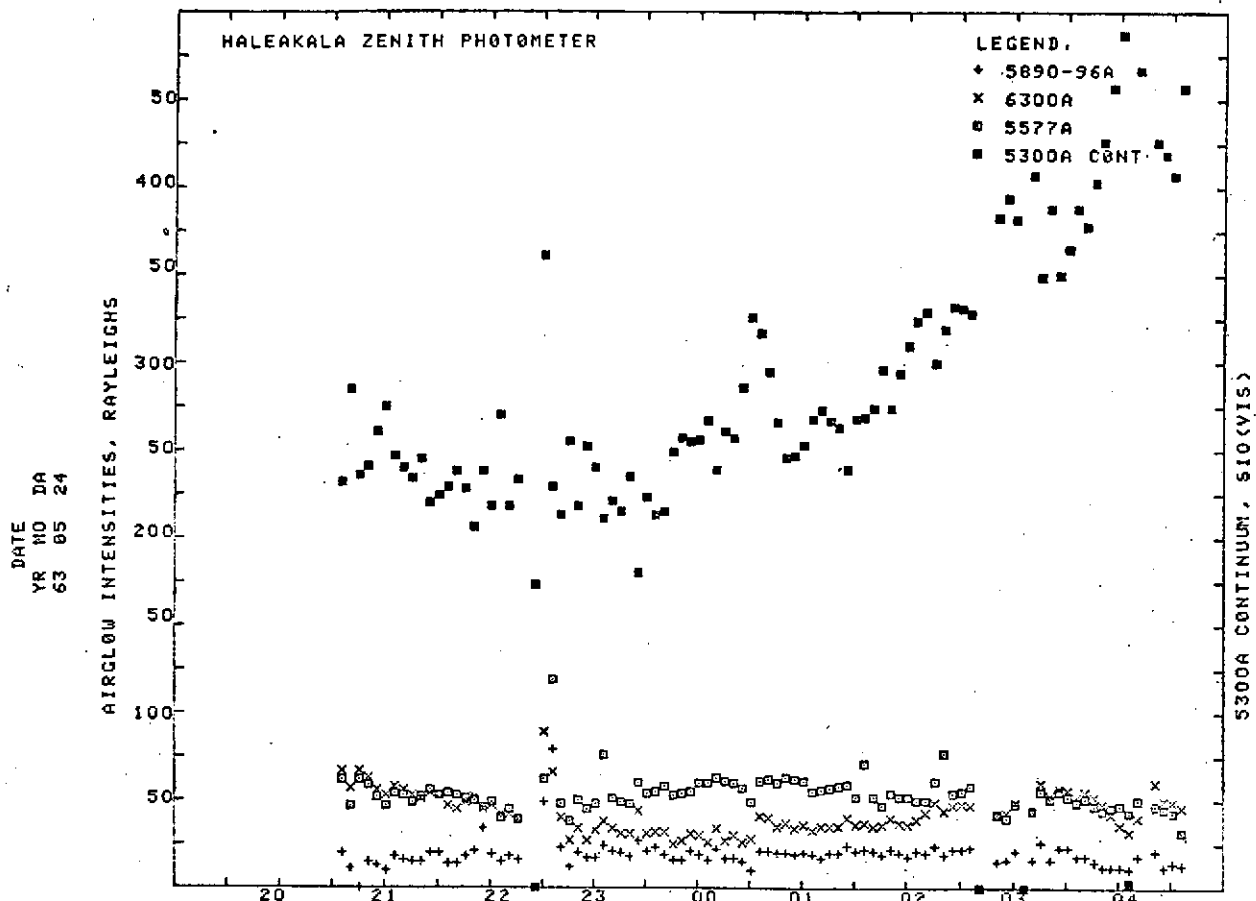


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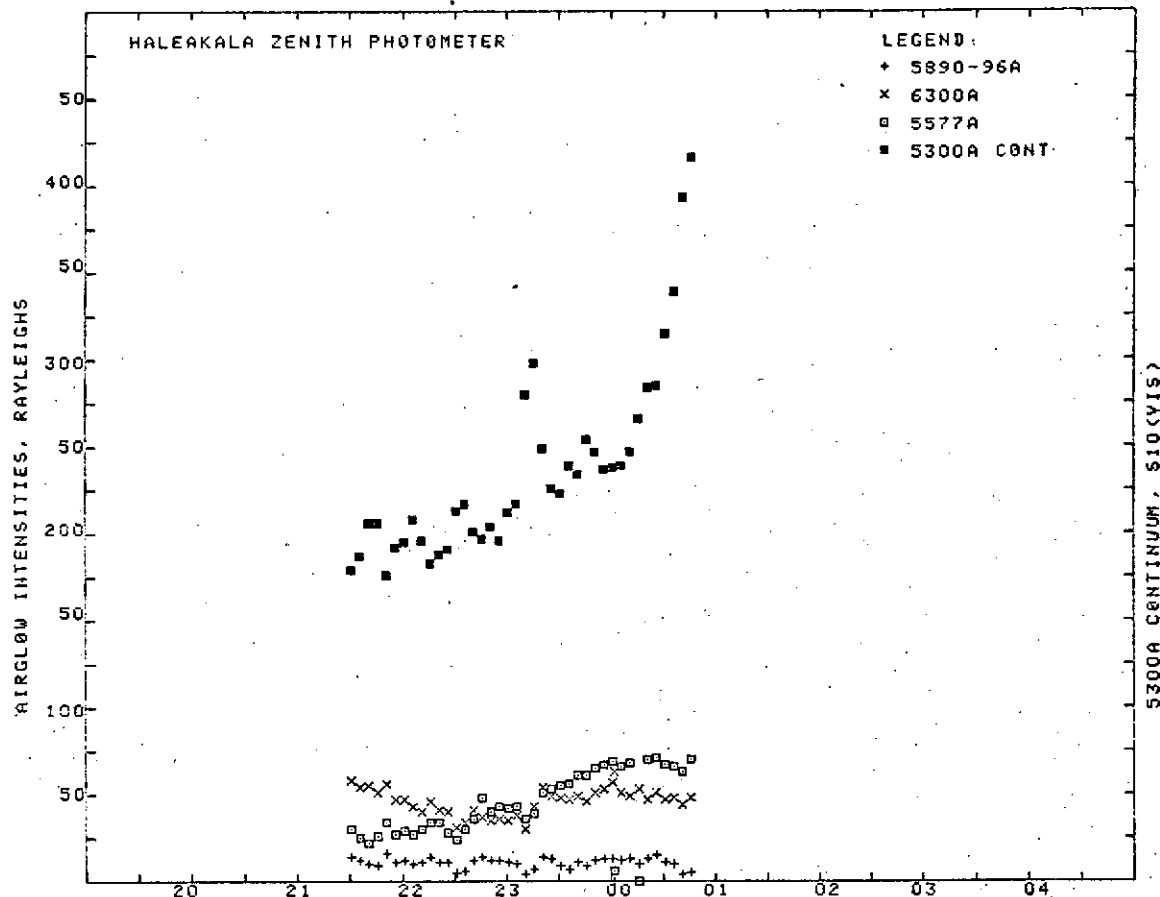


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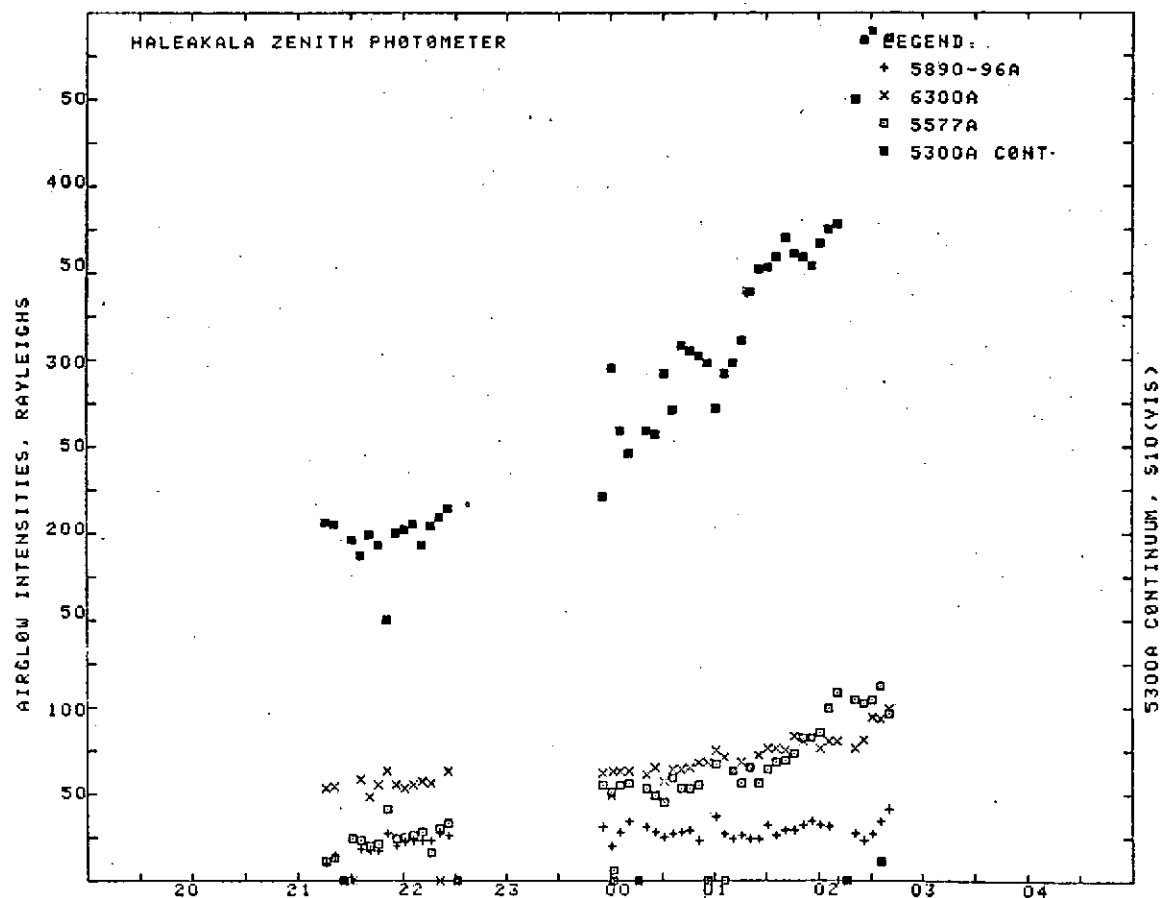




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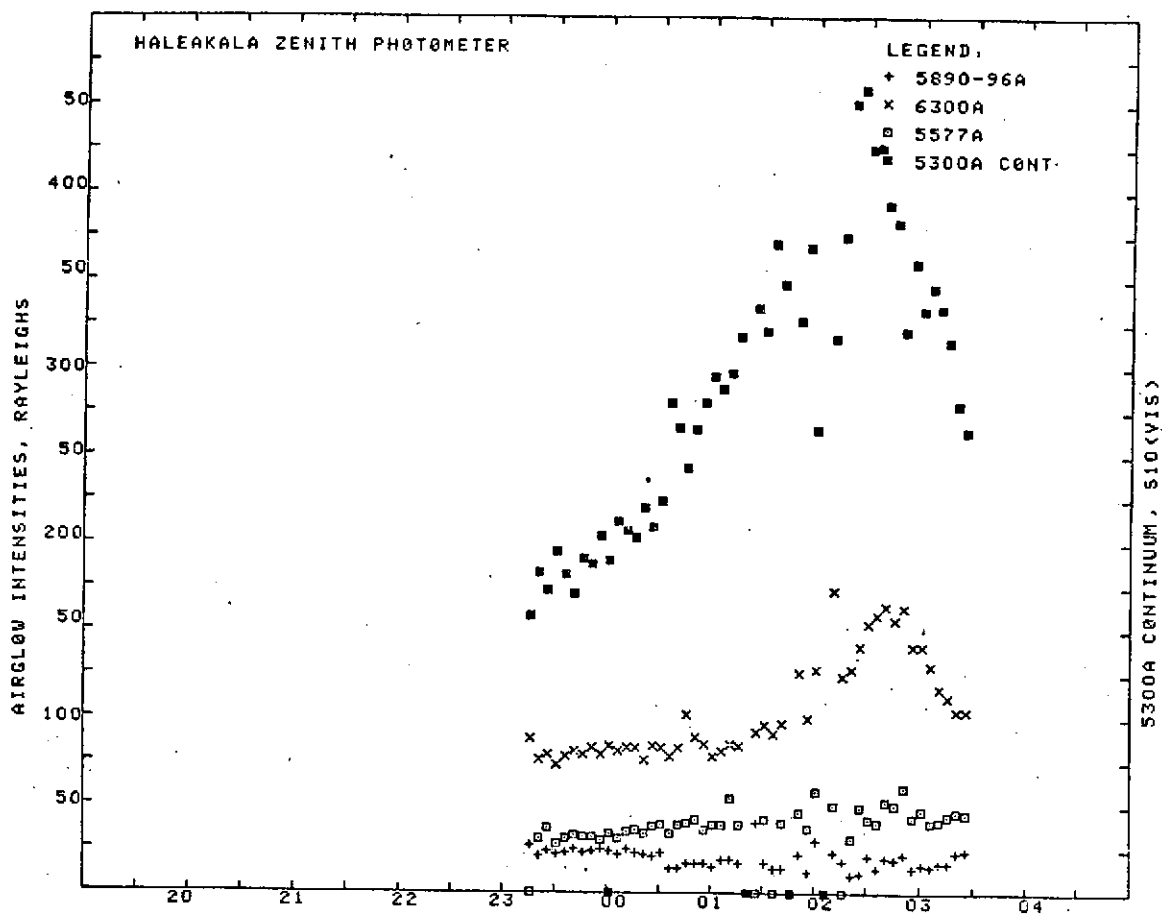


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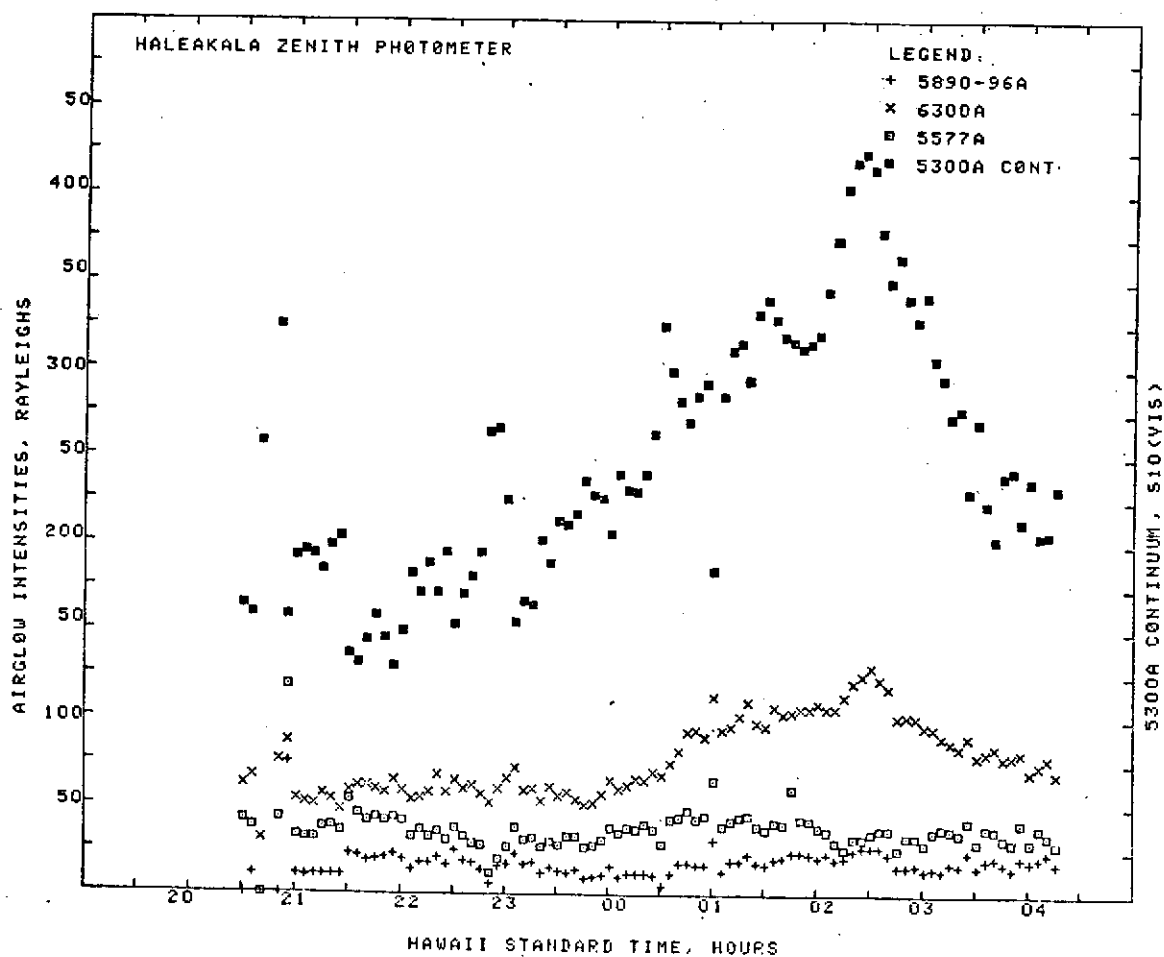


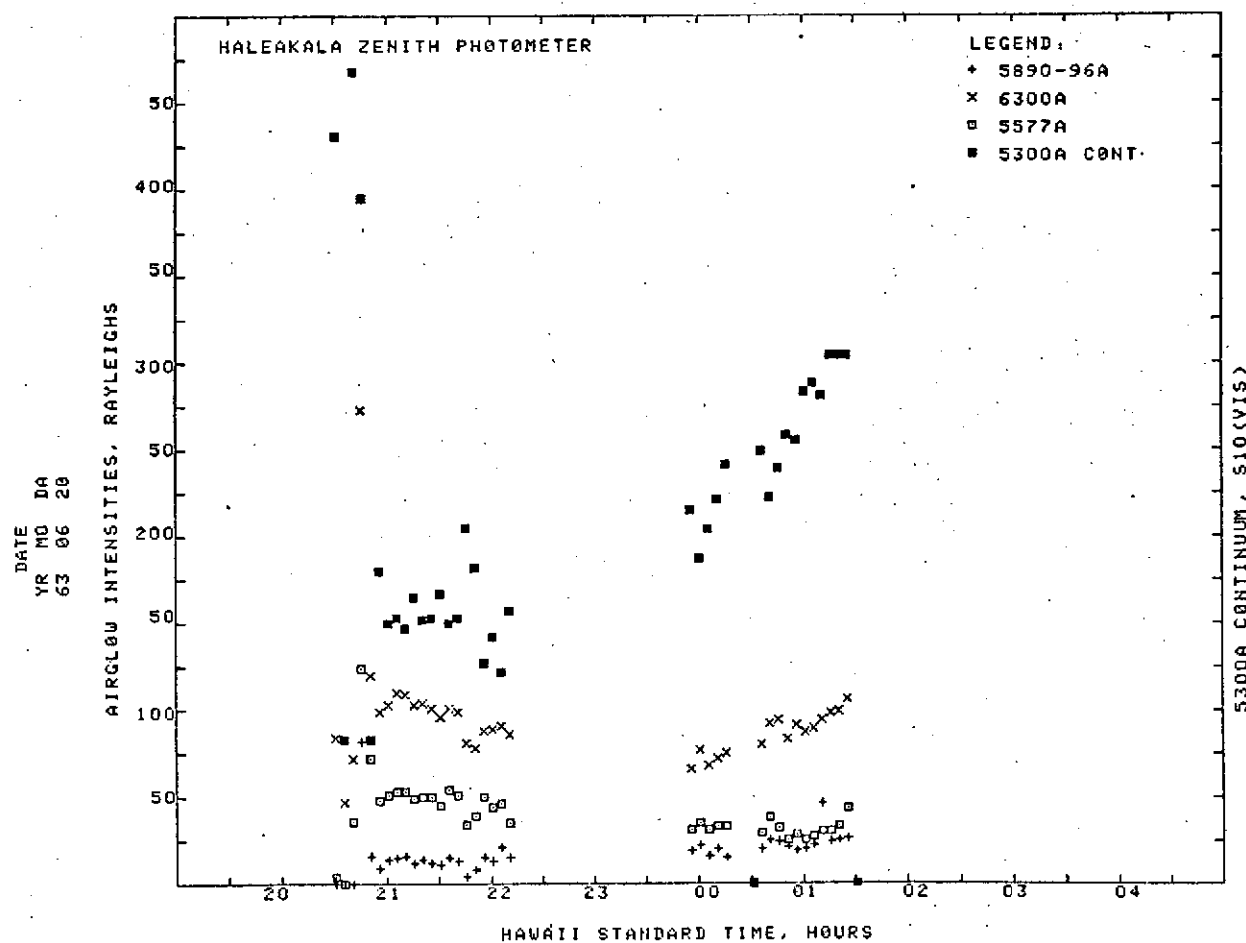
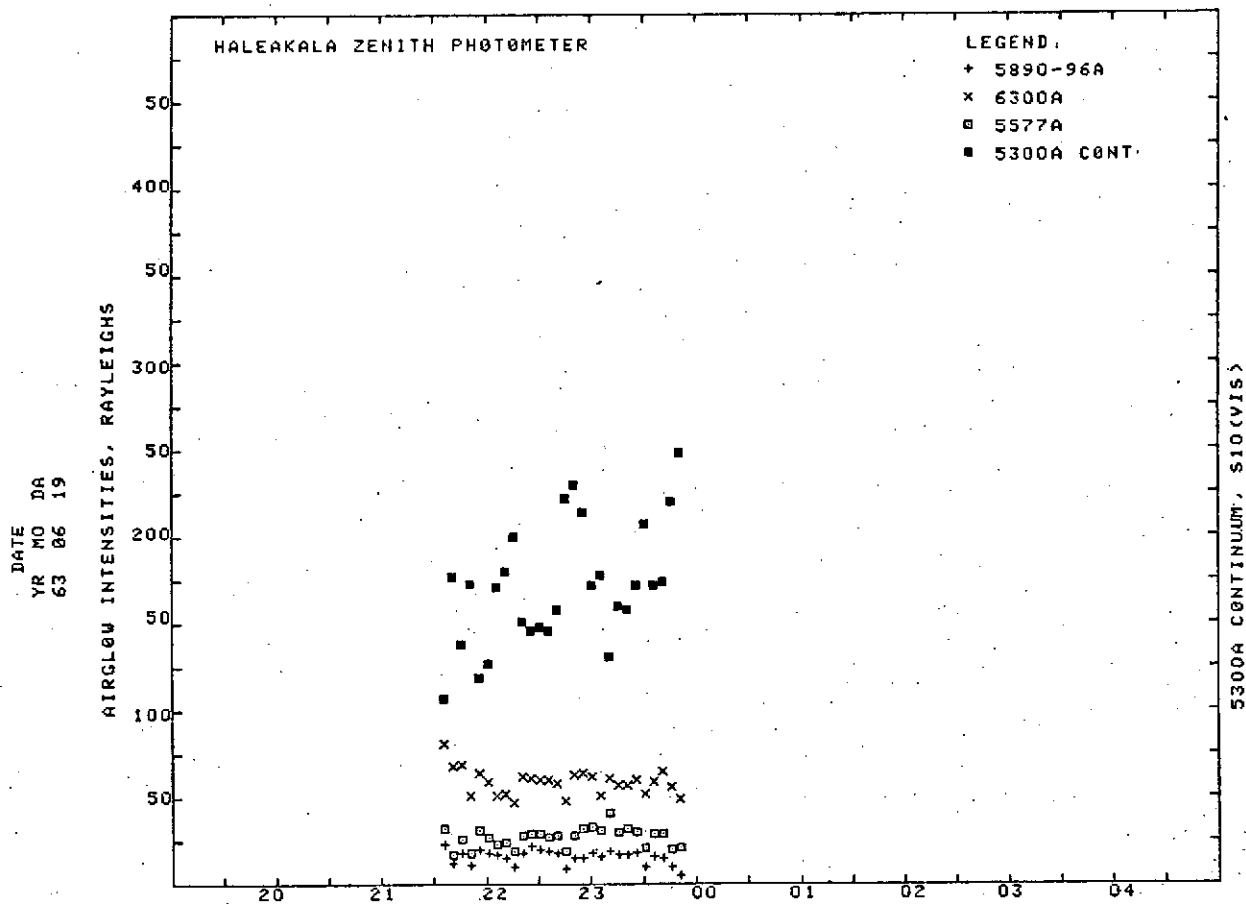
HAWAII STANDARD TIME, HOURS

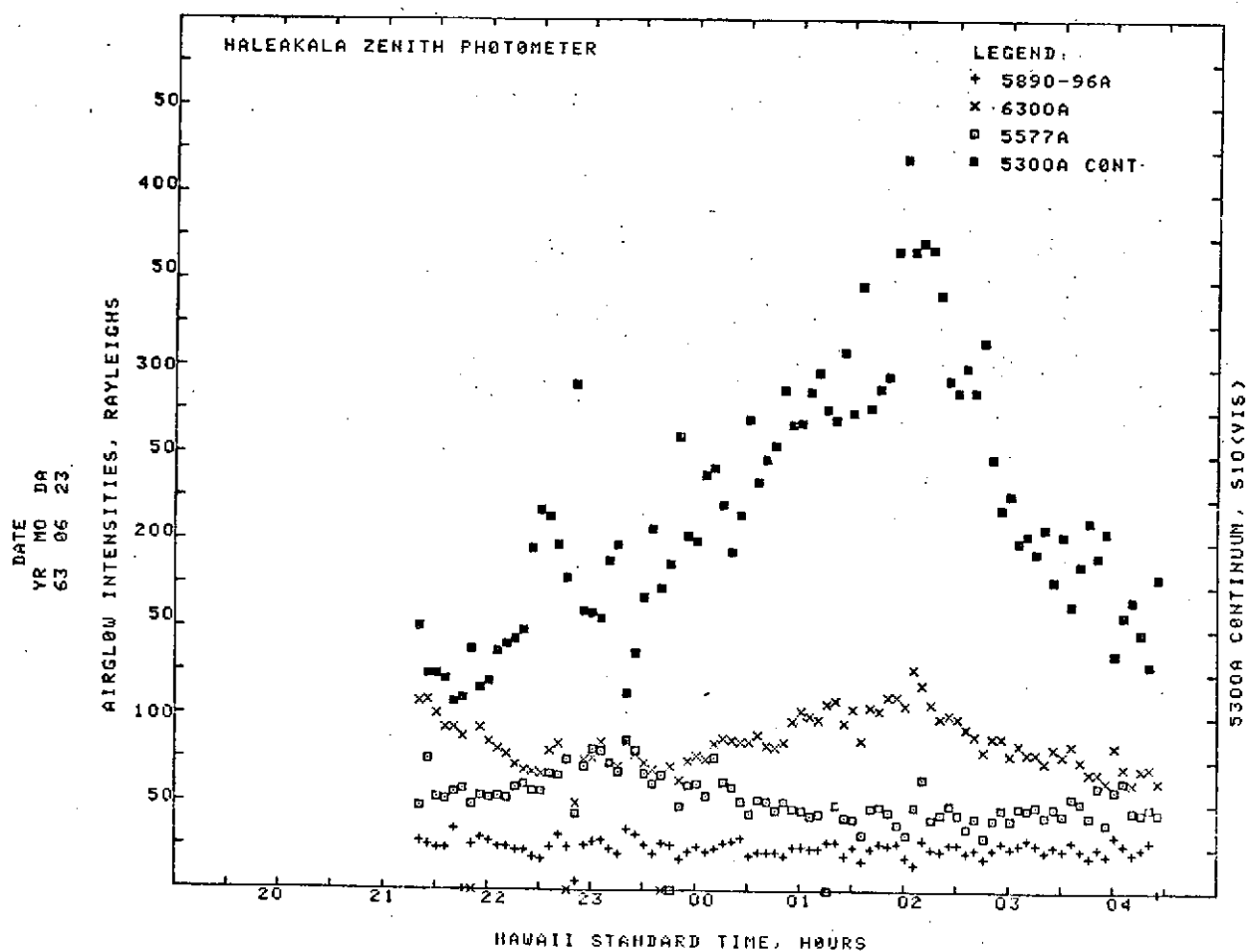
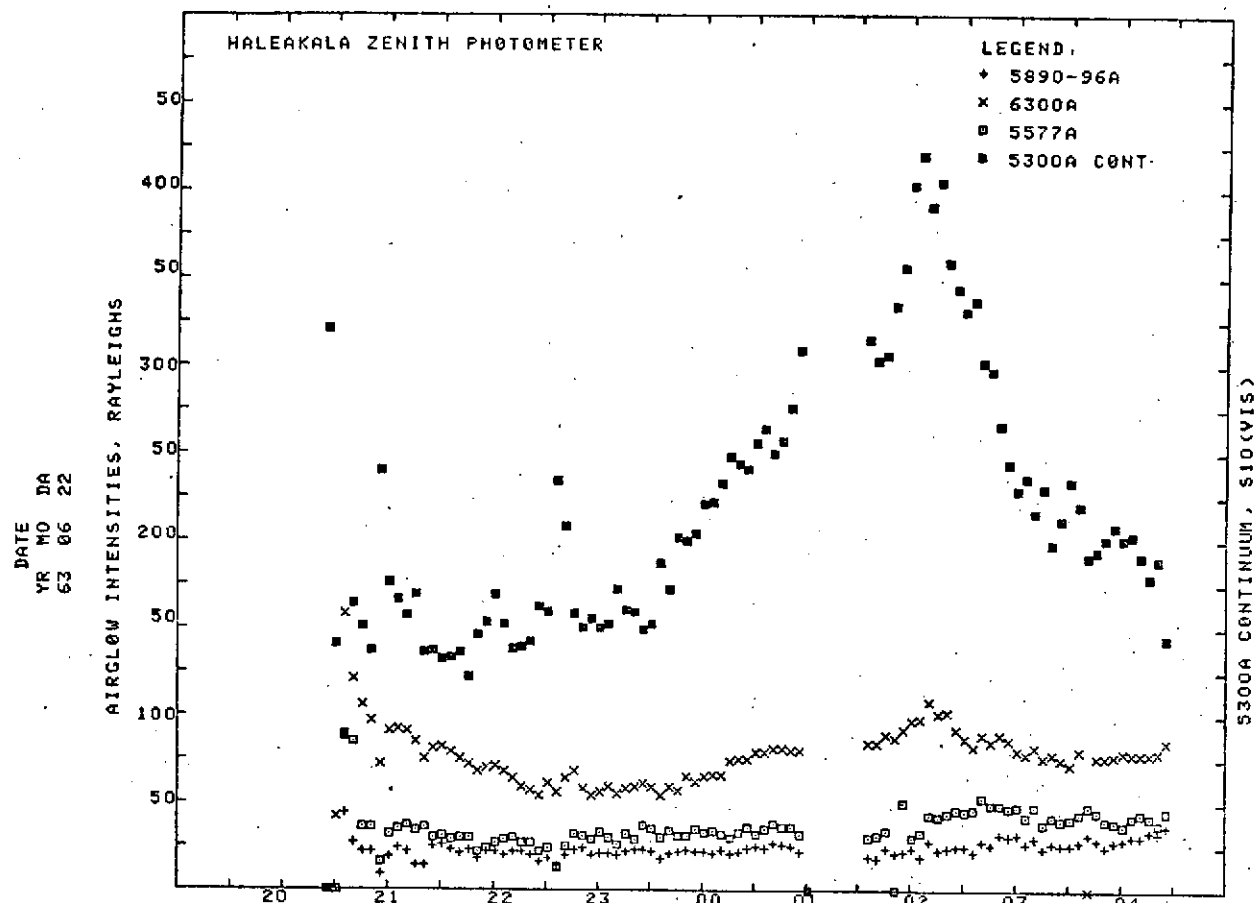
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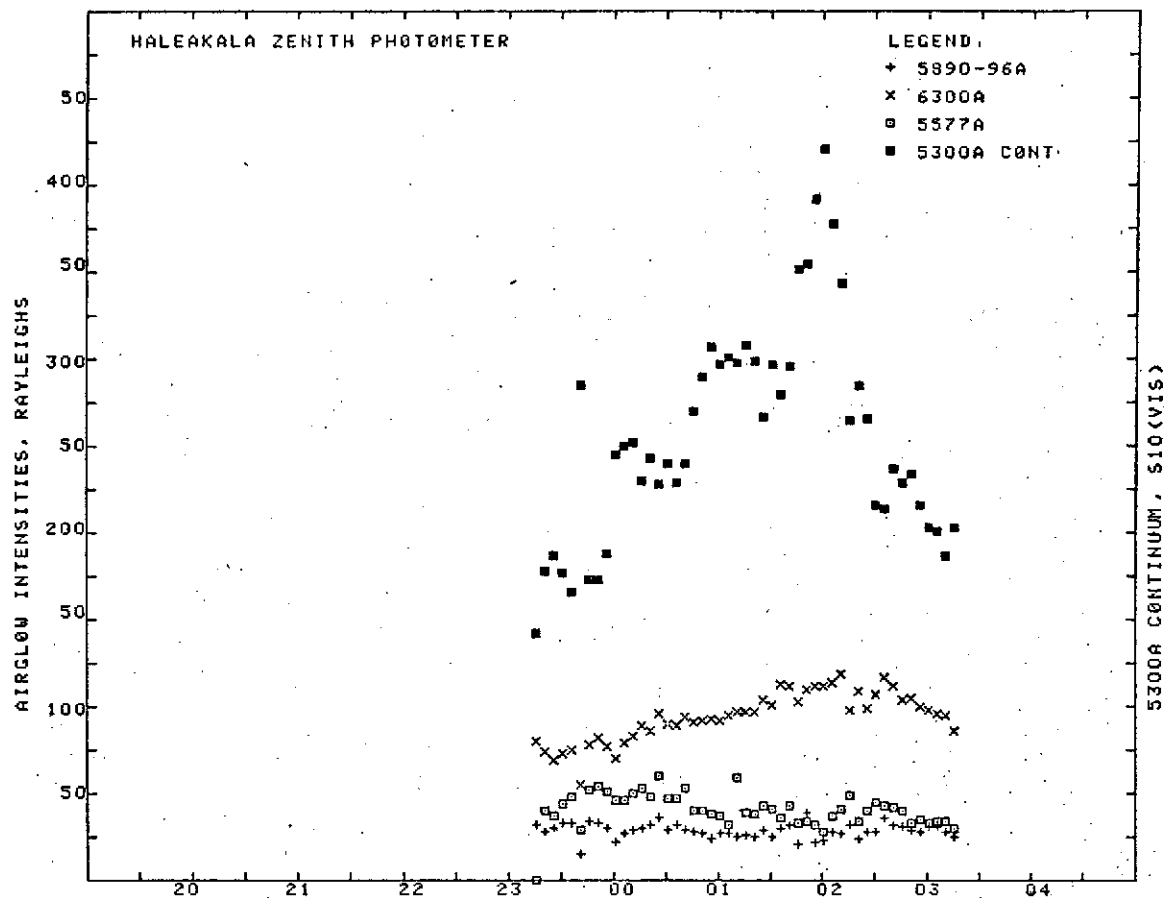
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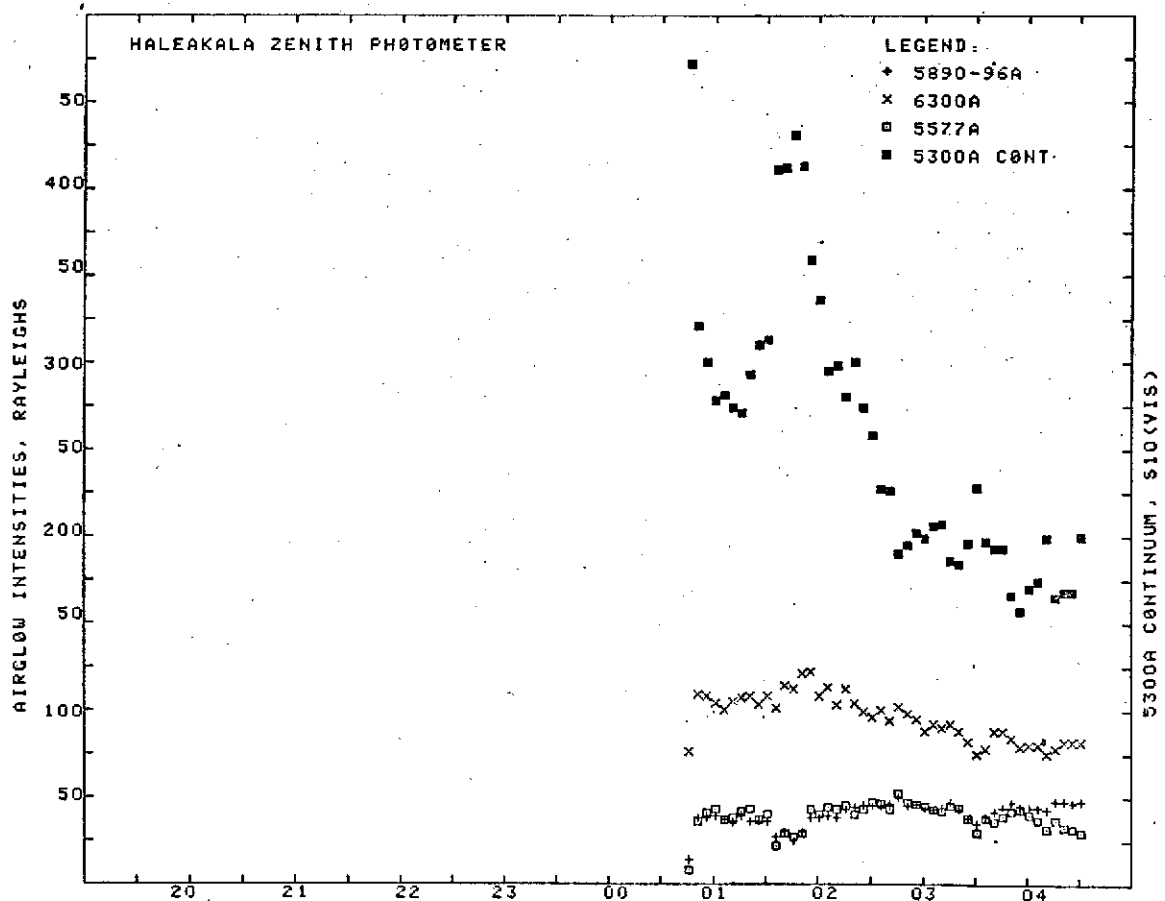




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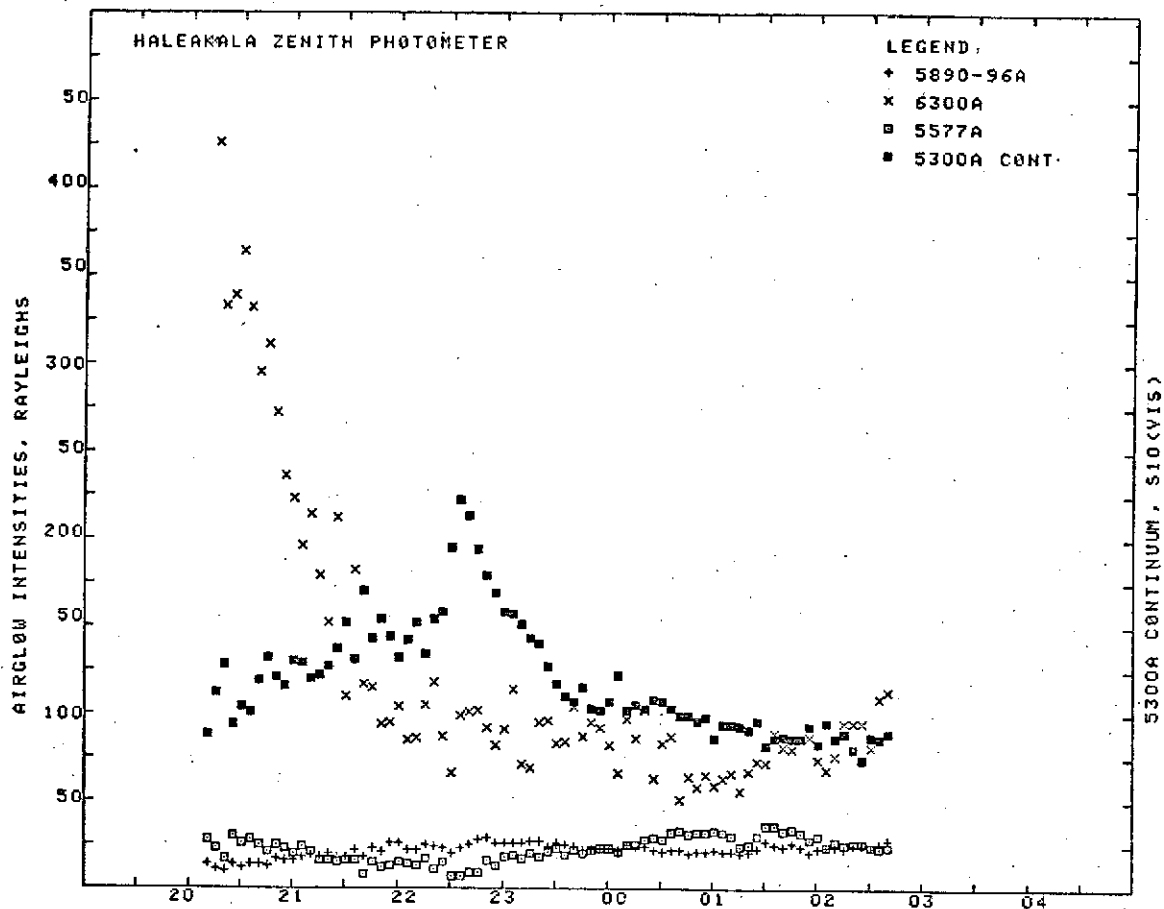
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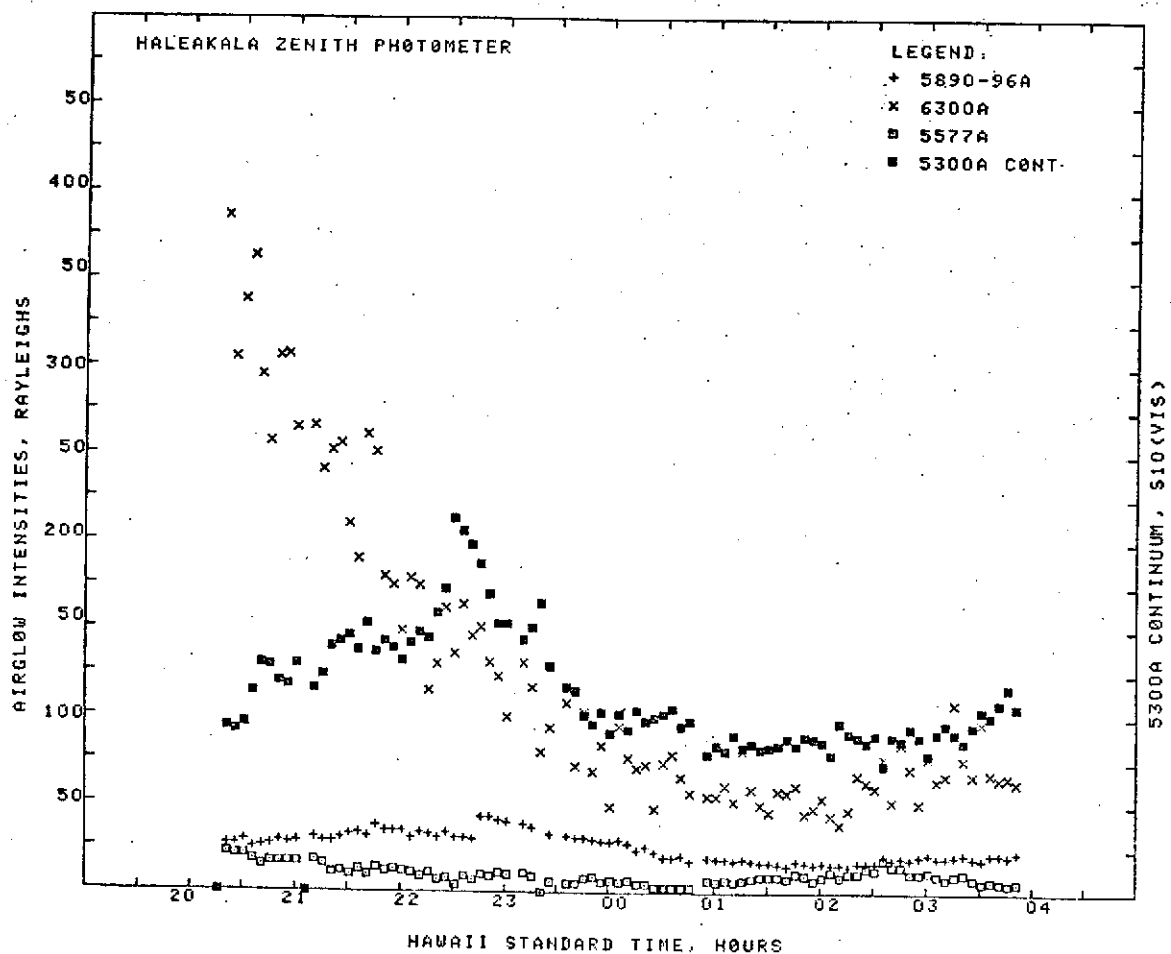
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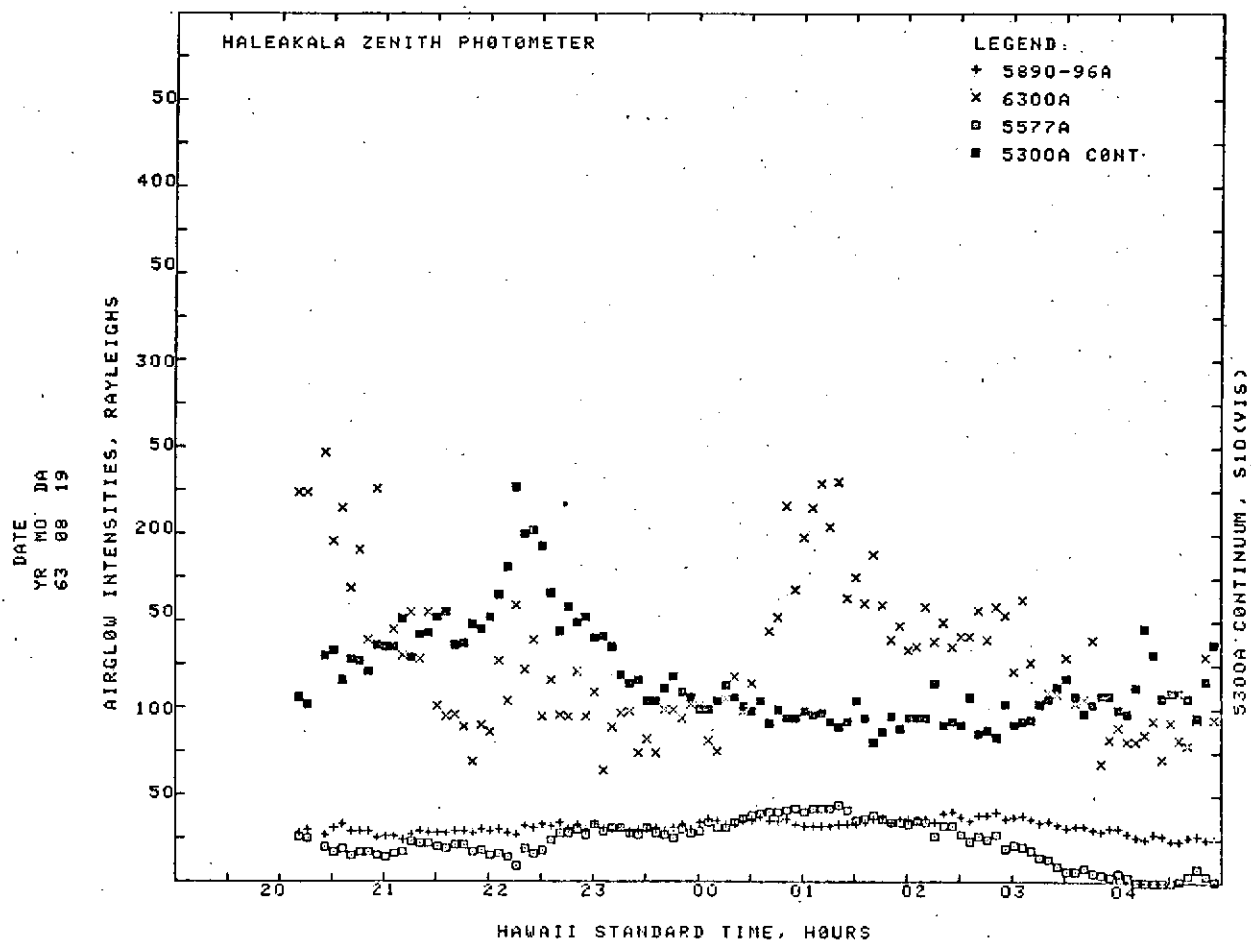
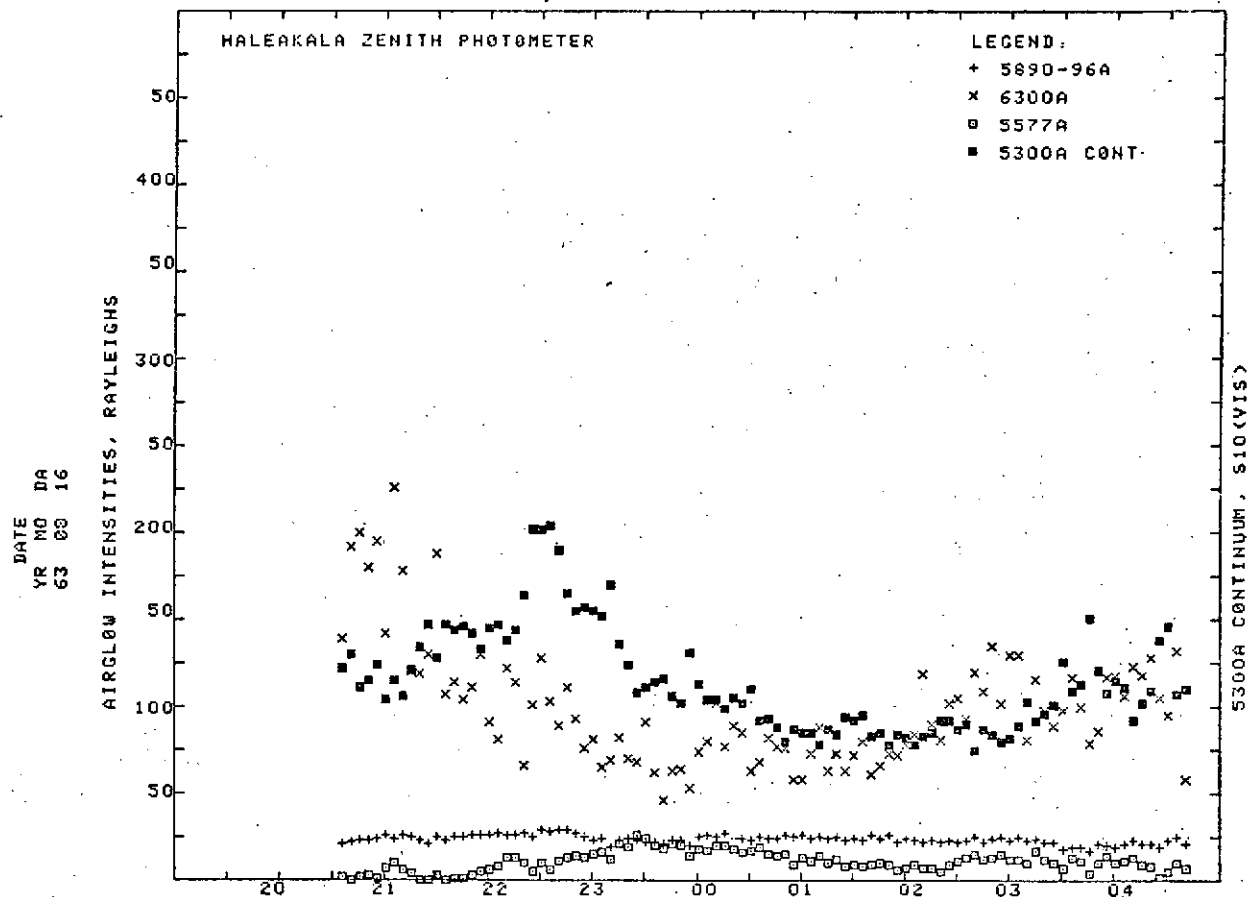


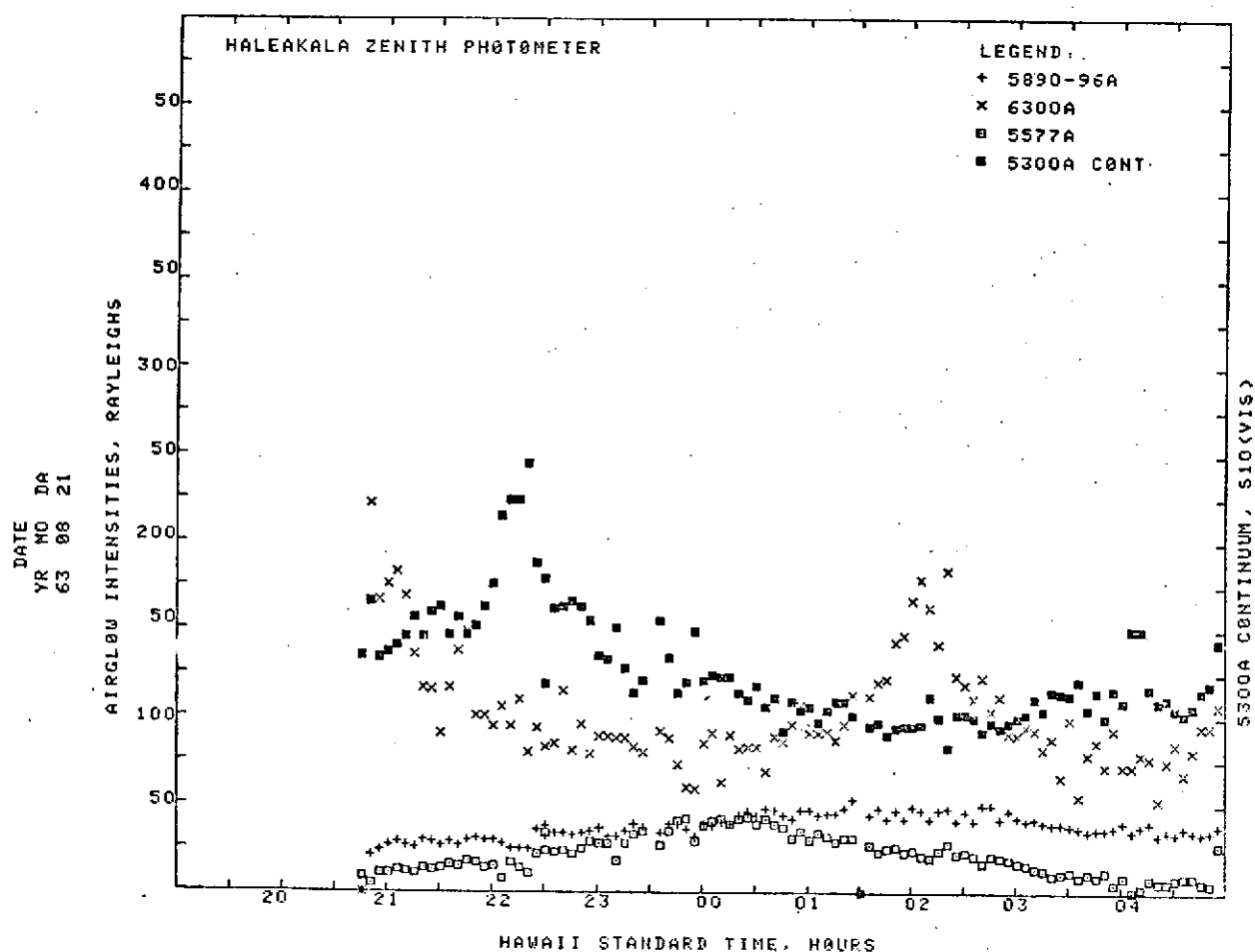
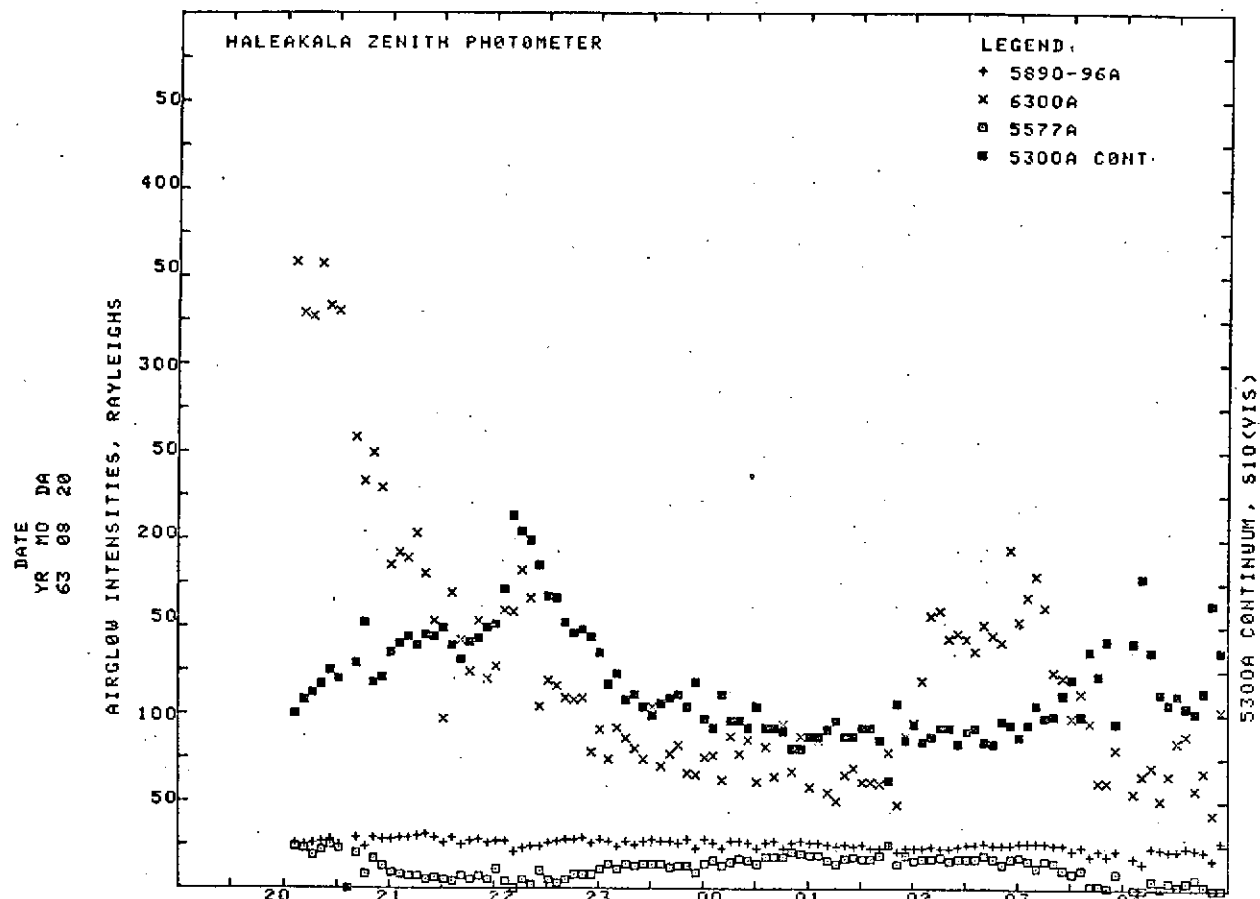
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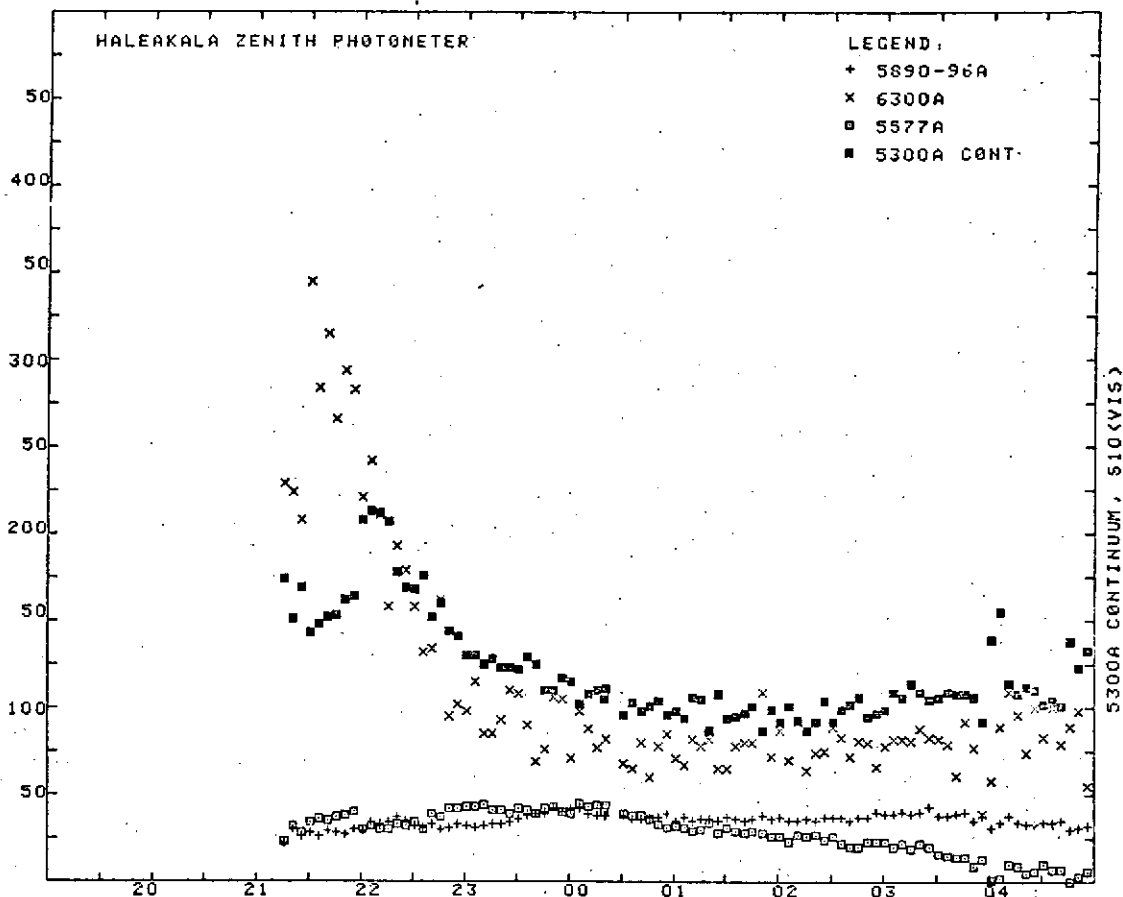






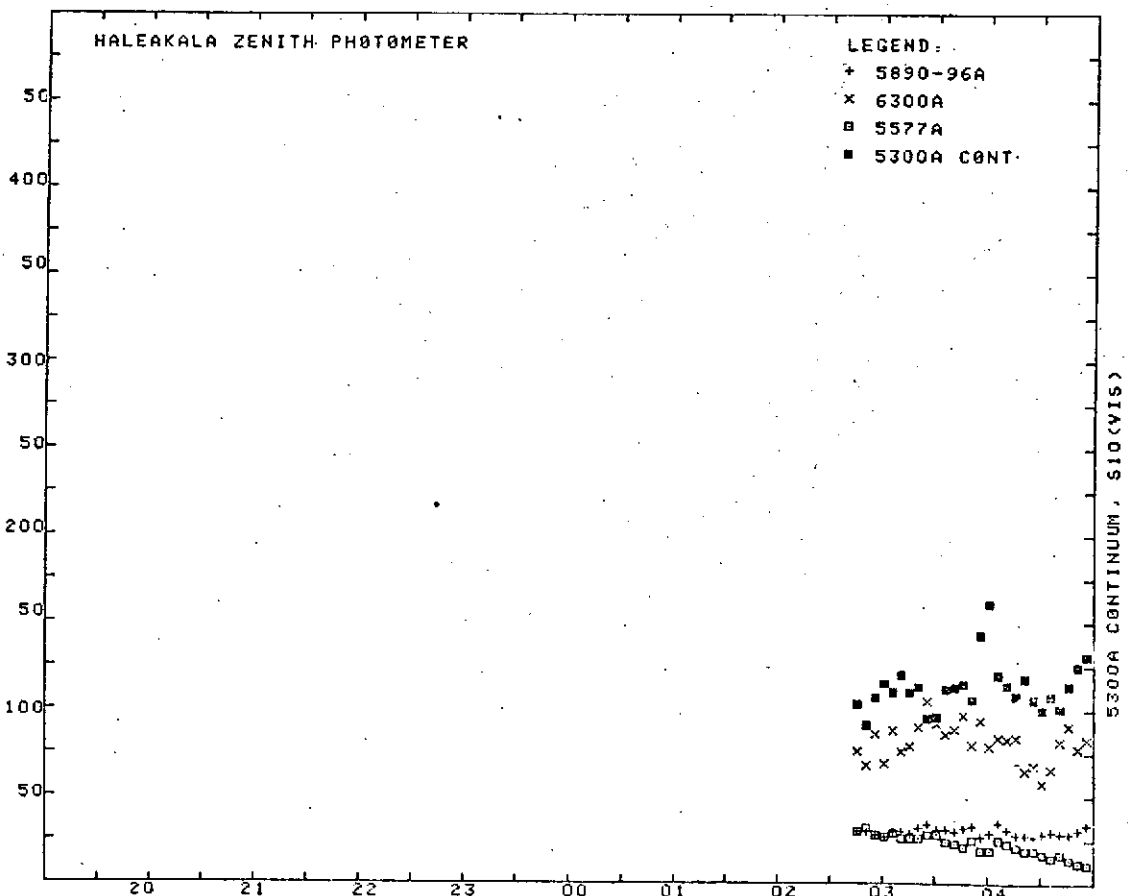
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AIRGLOW INTENSITIES, RAYLEIGHS



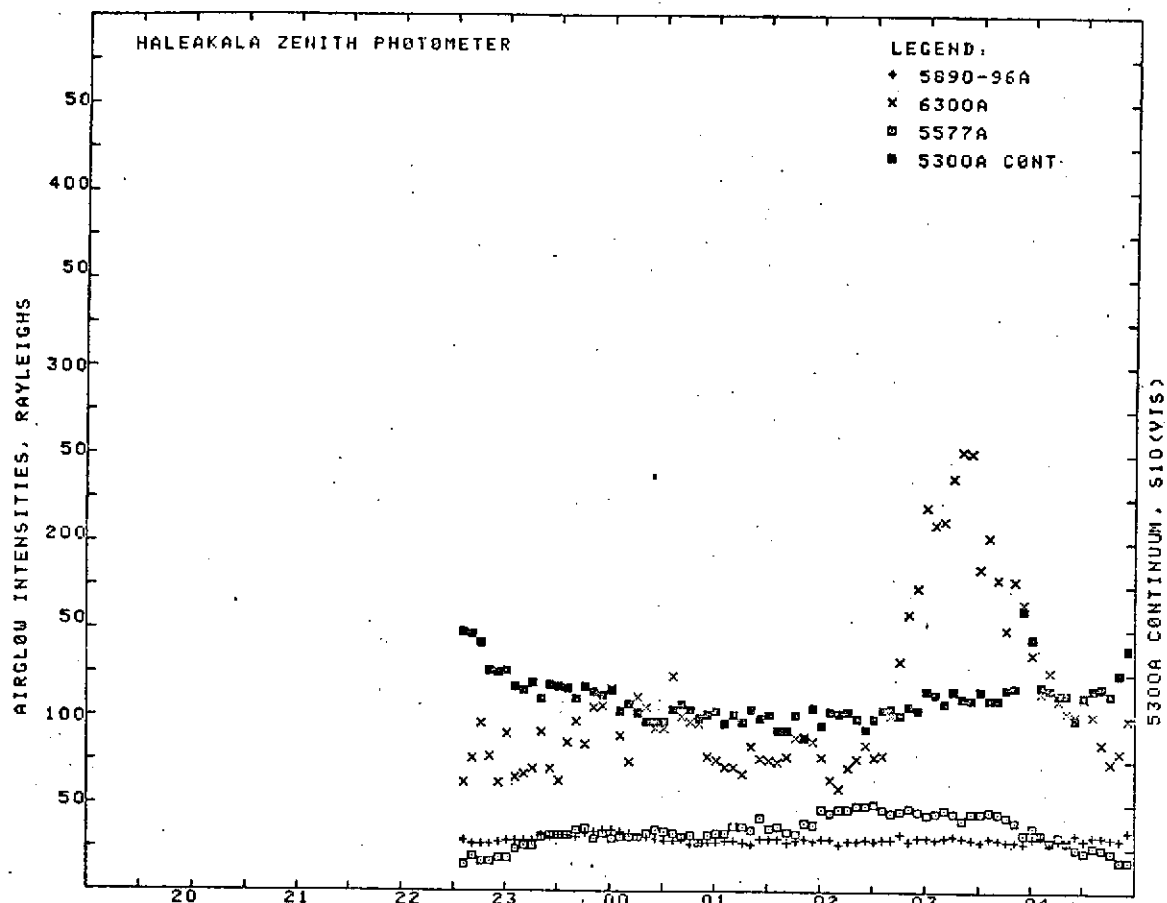
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AIRGLOW INTENSITIES, RAYLEIGHS

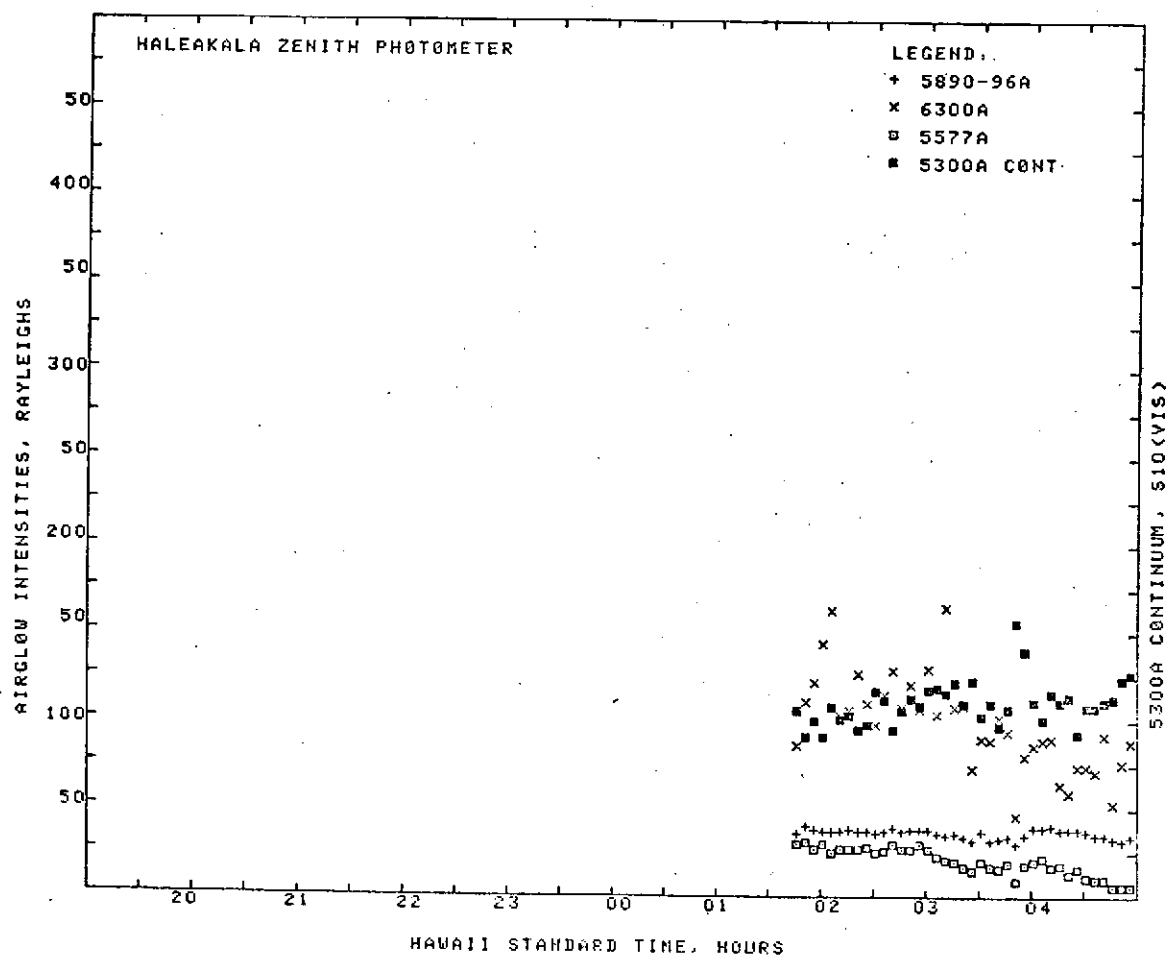


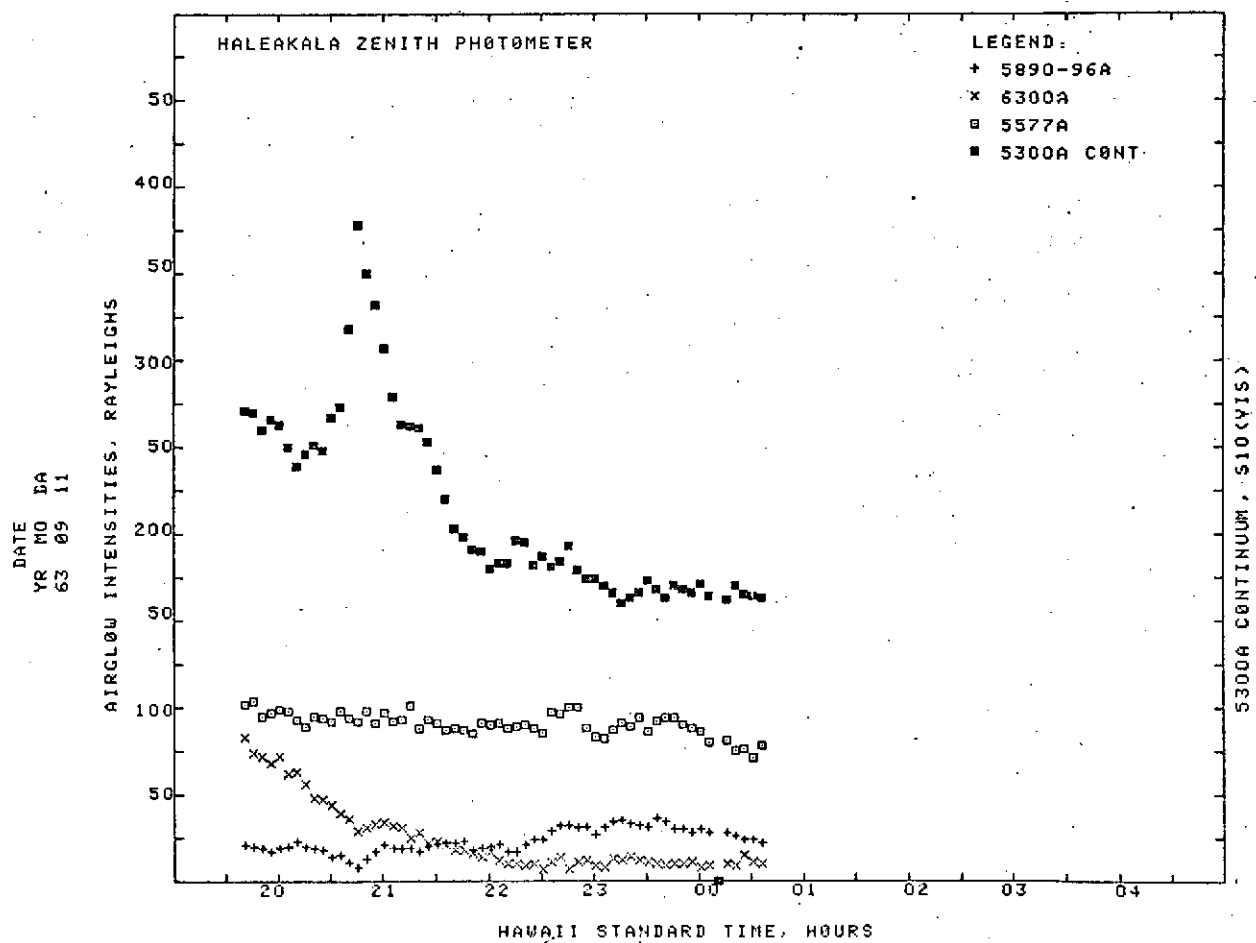
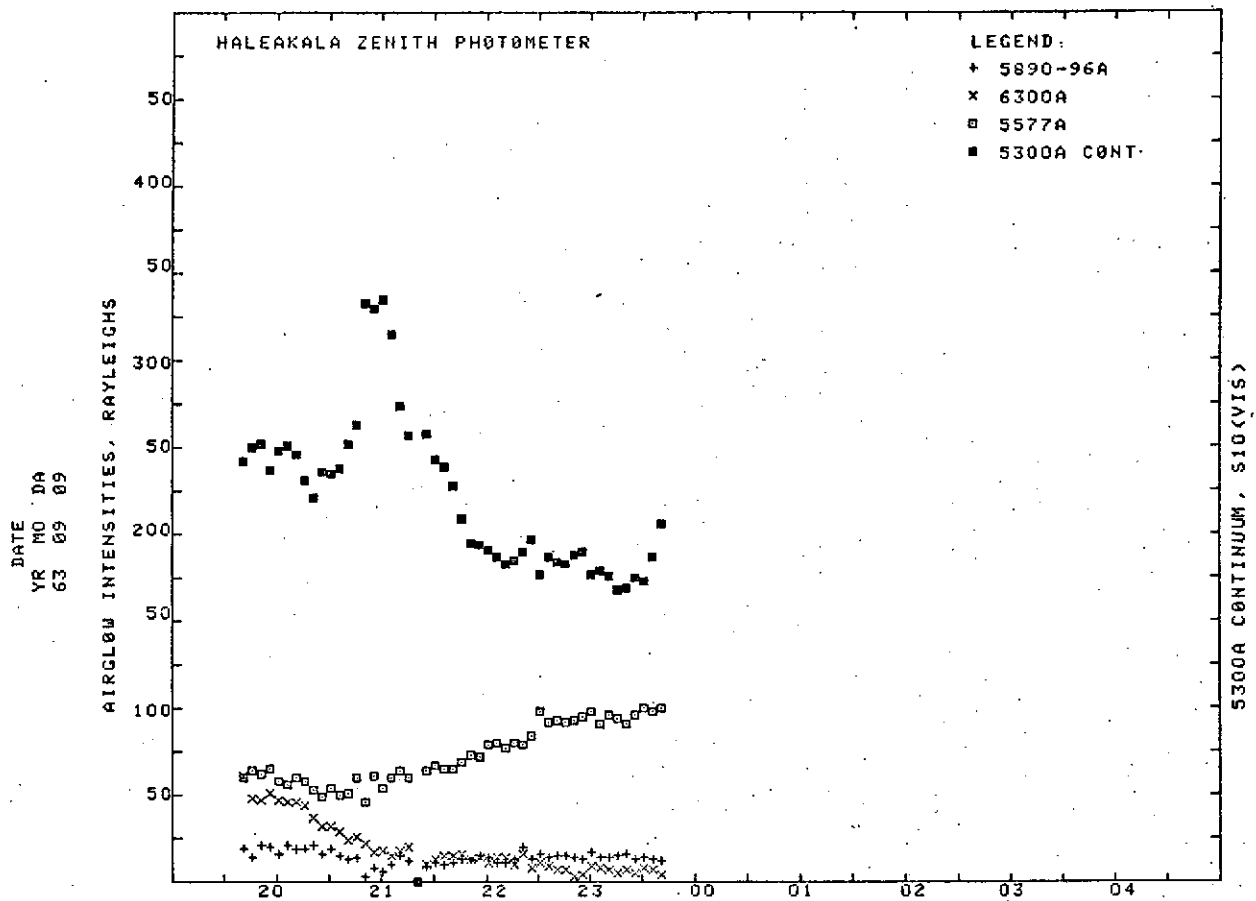
HAWAII STANDARD TIME, HOURS

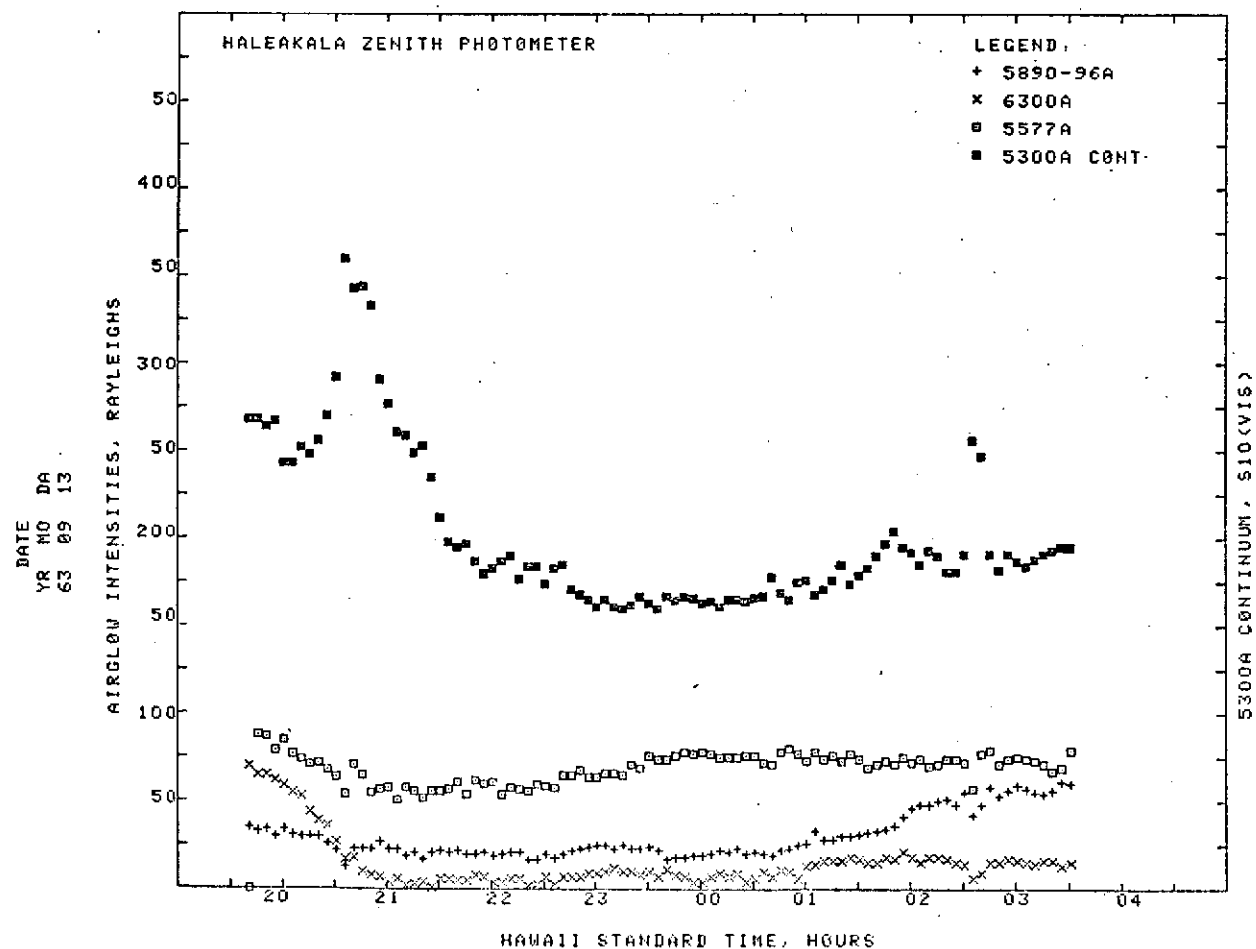
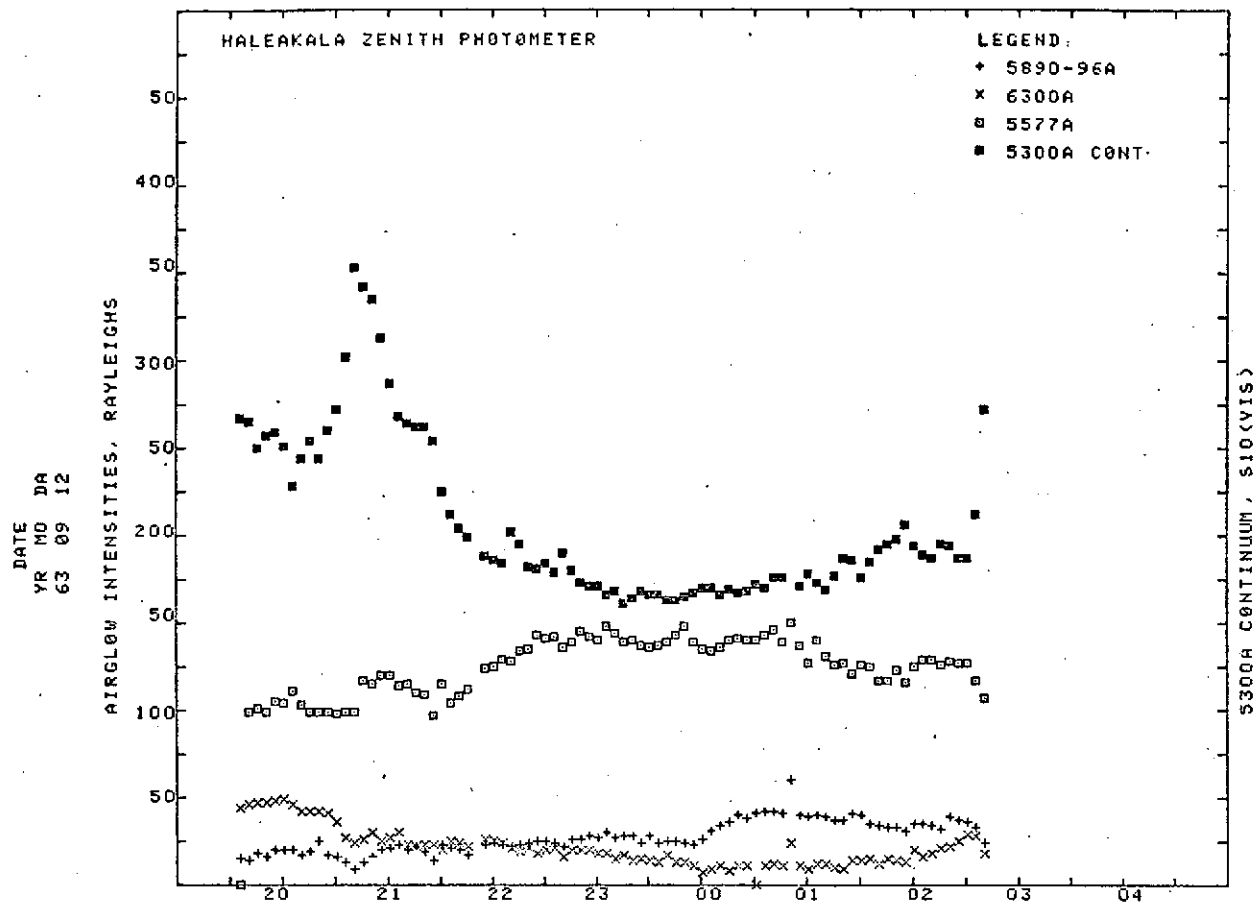
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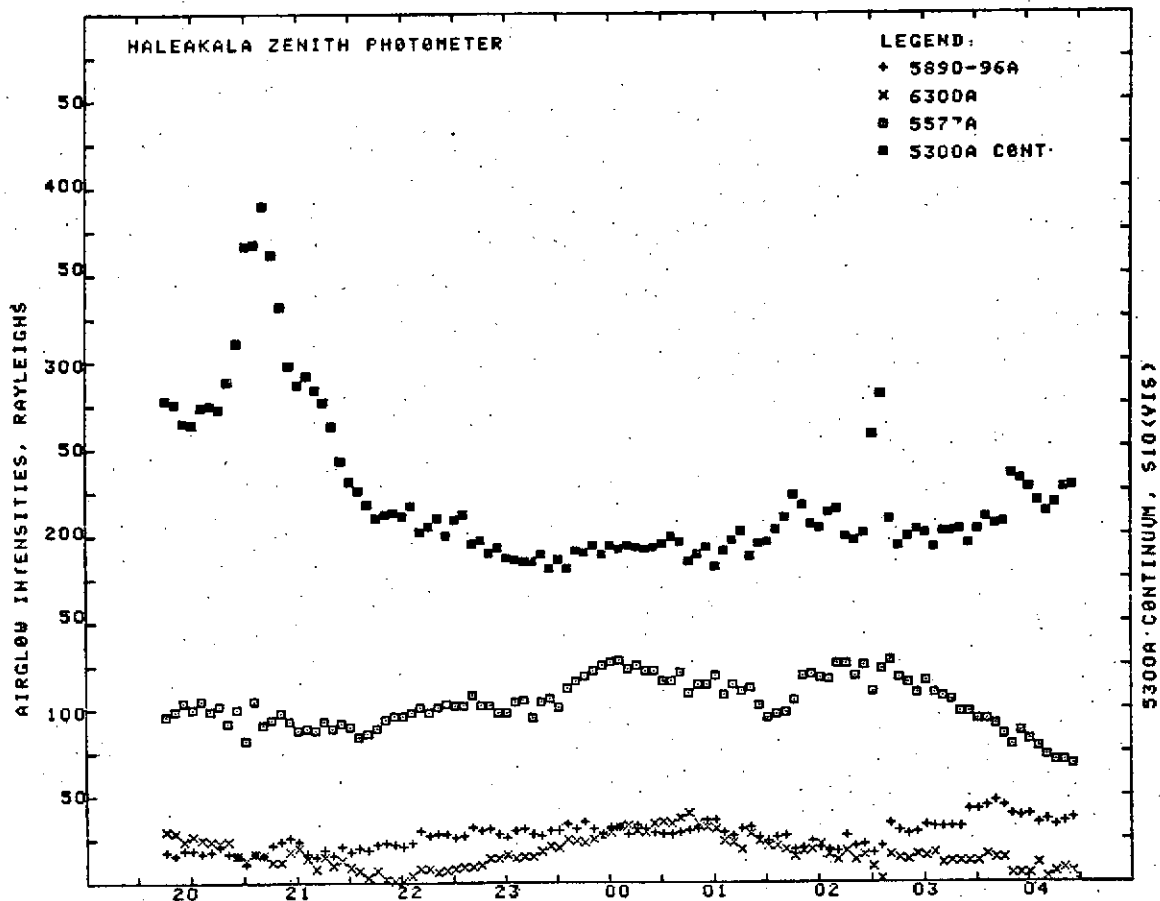
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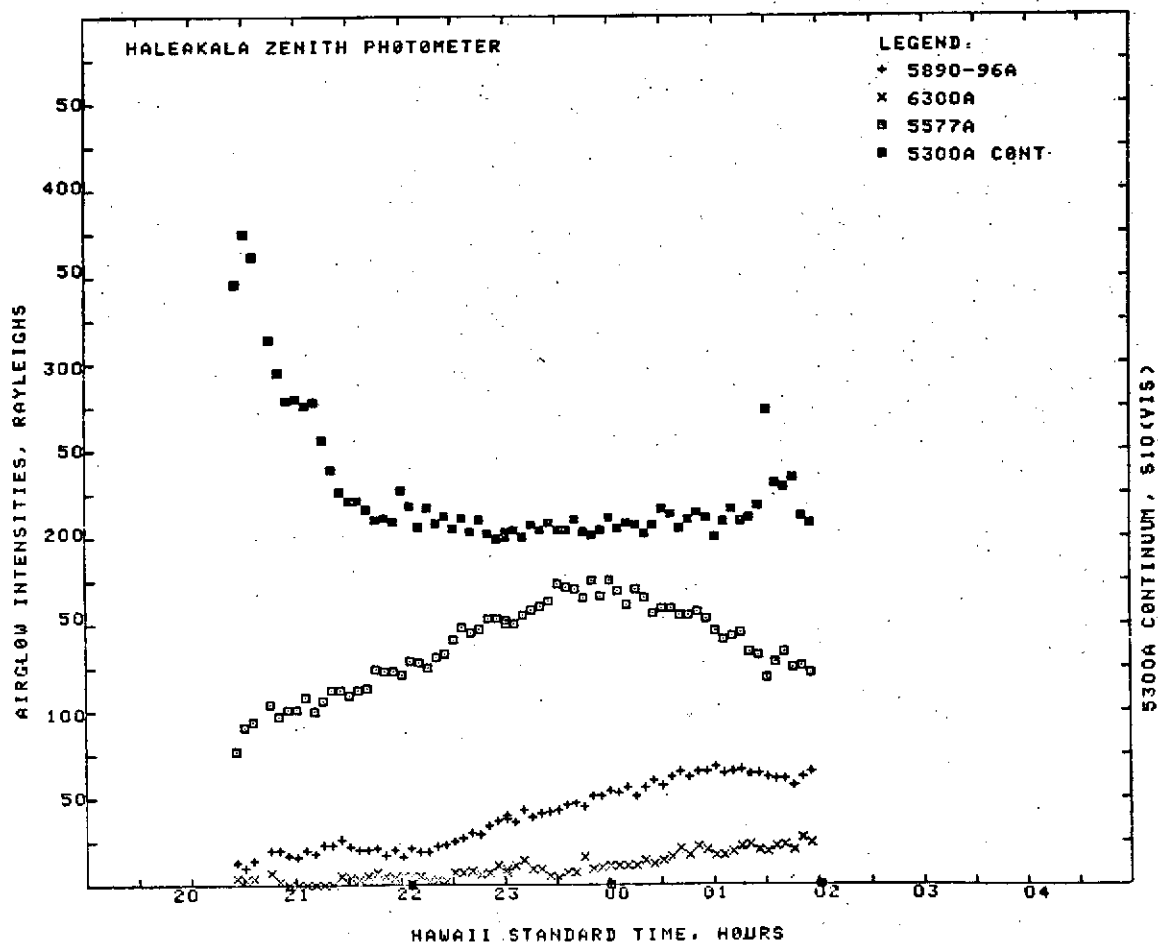




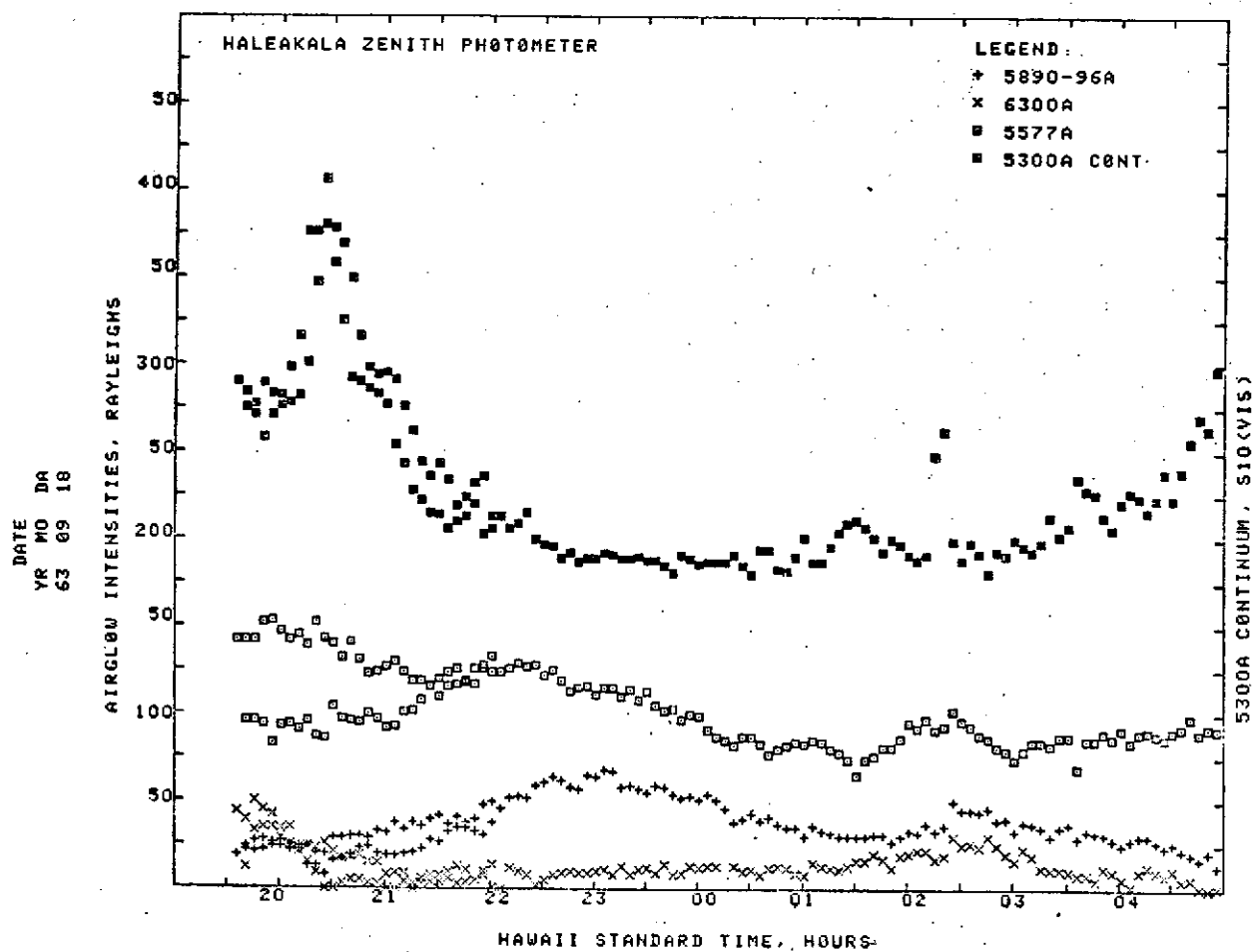
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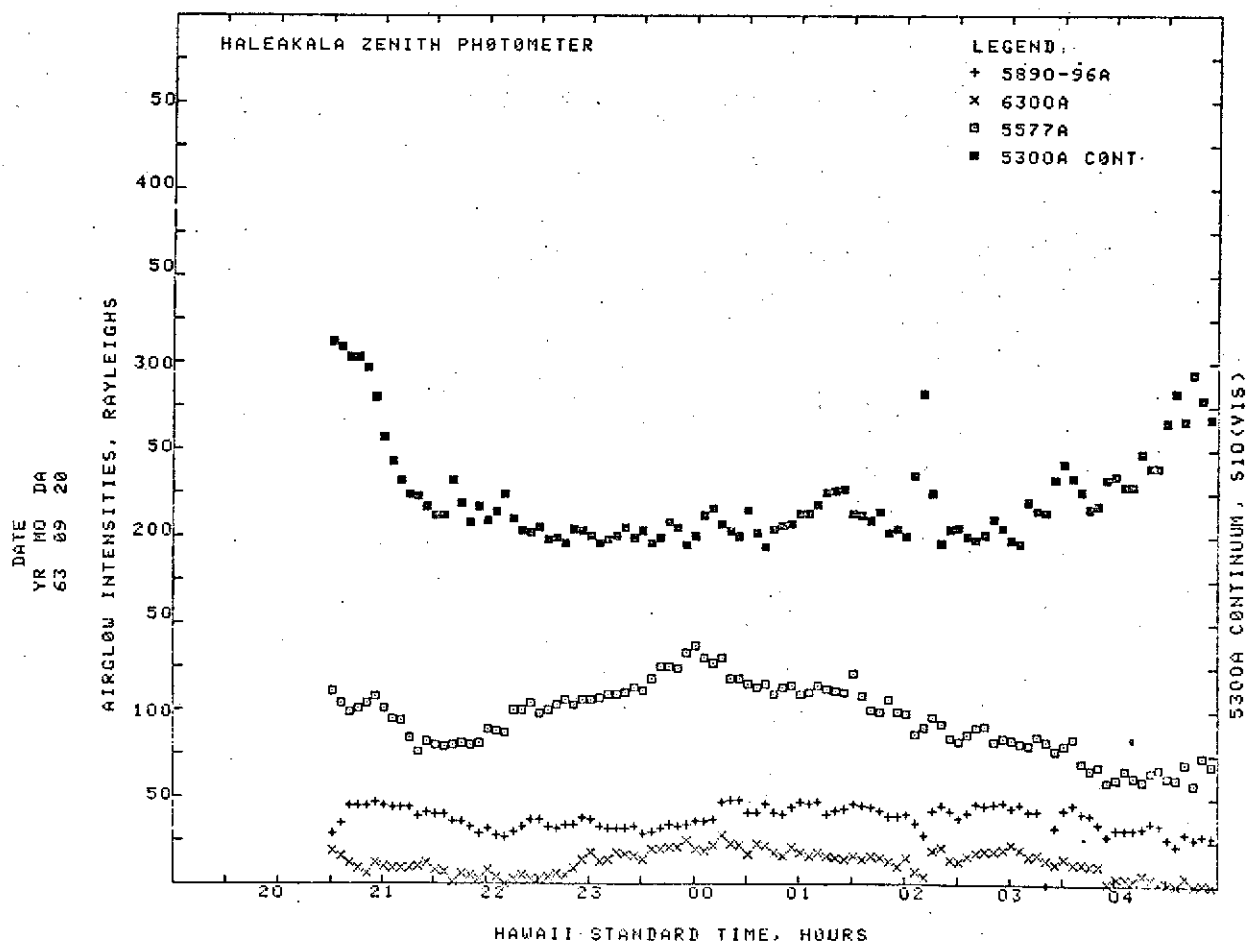
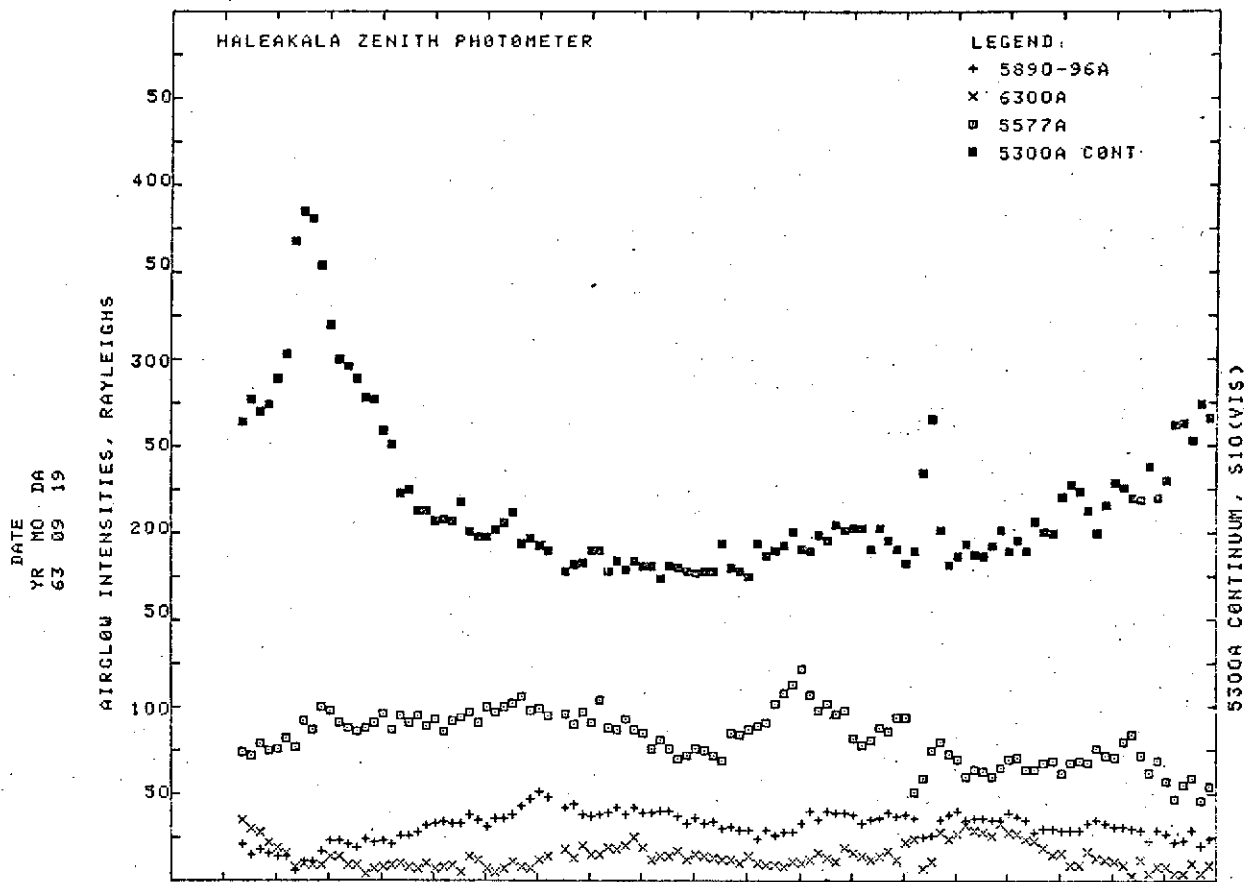


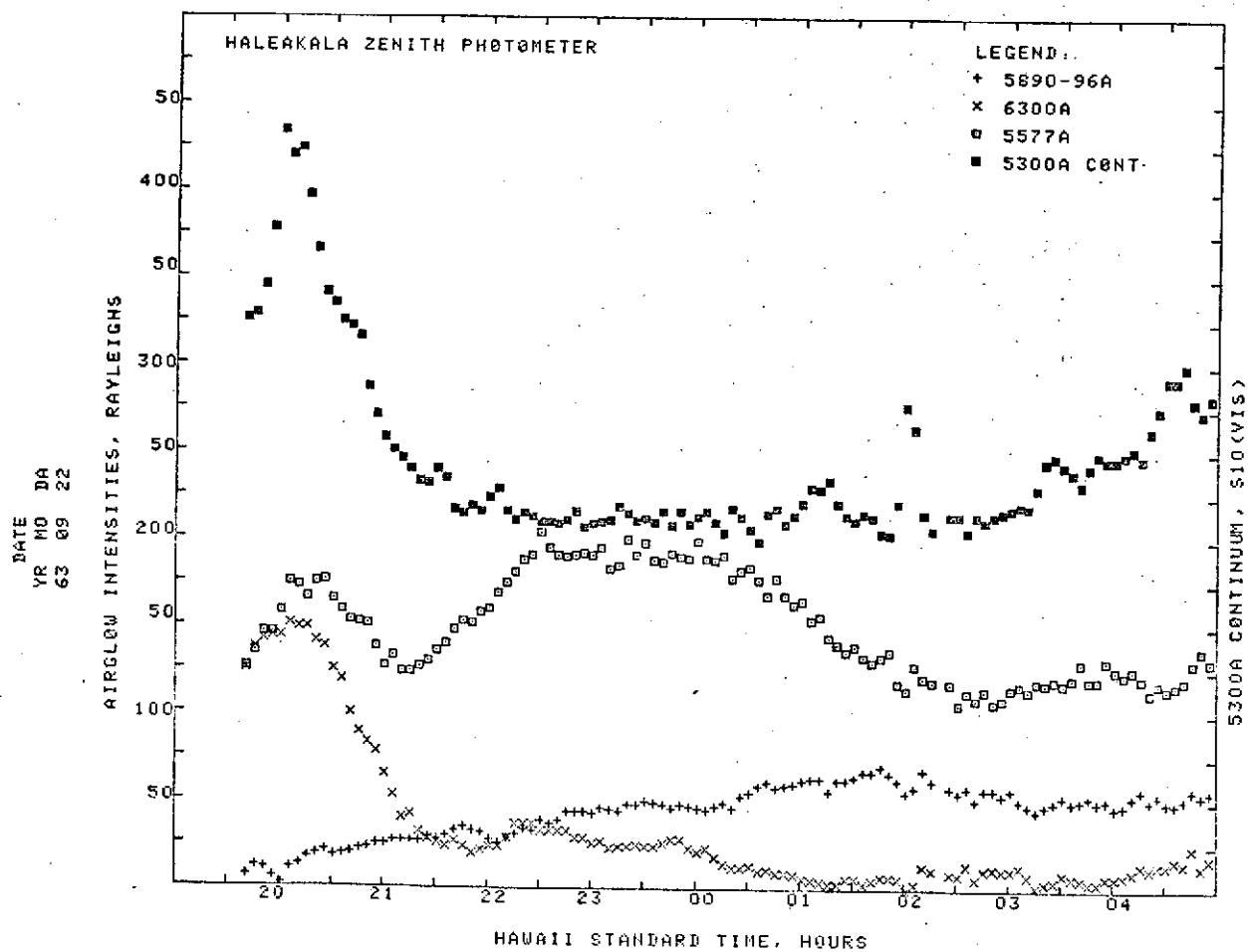
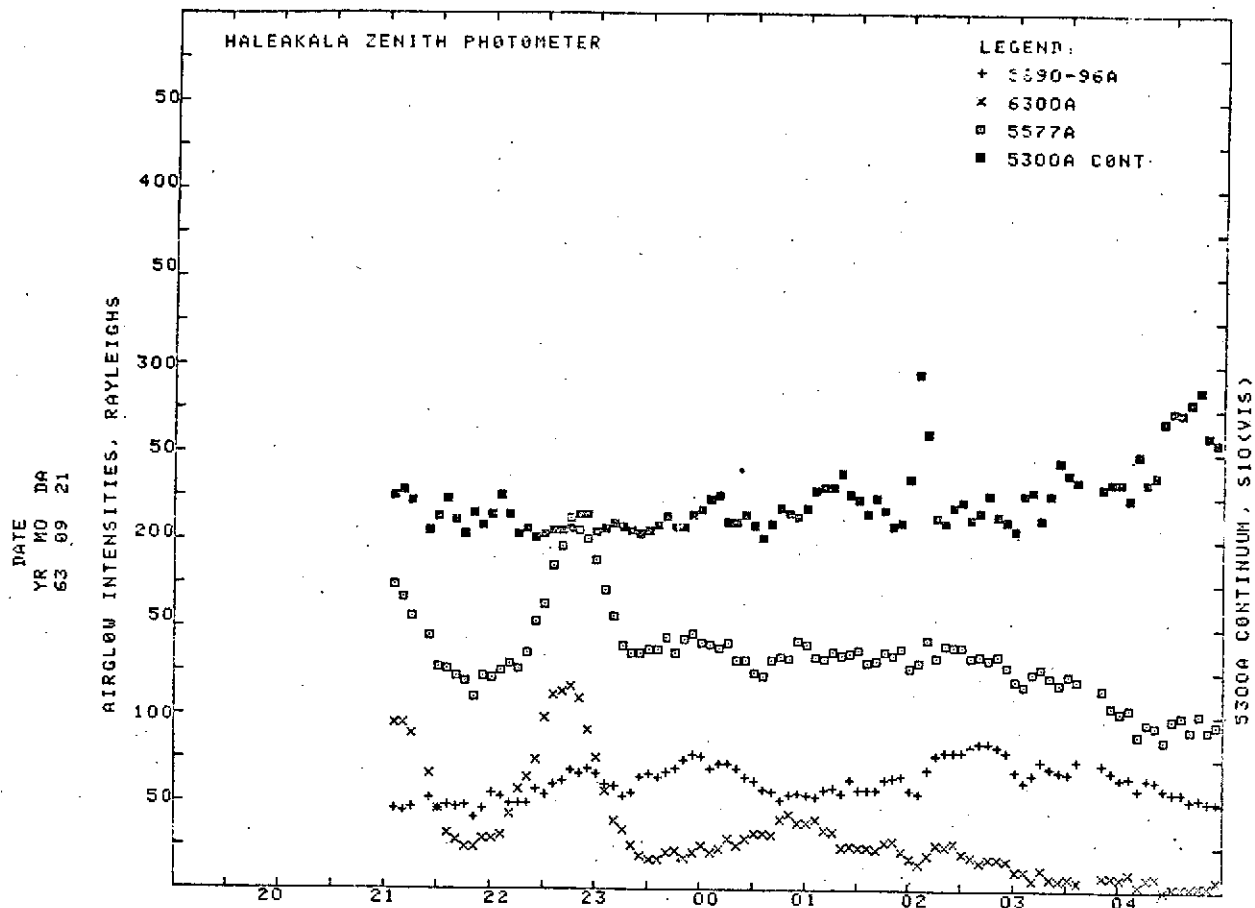
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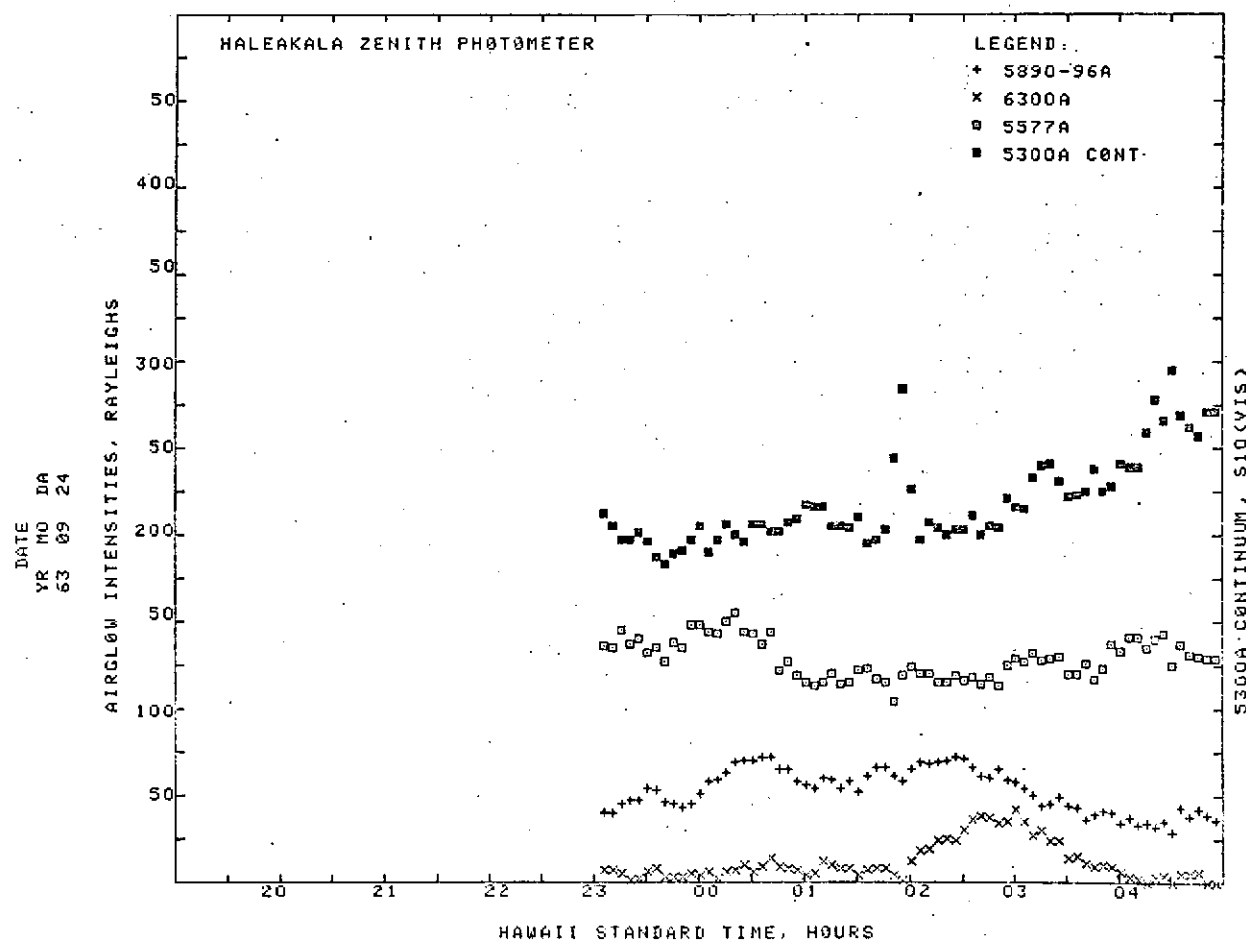
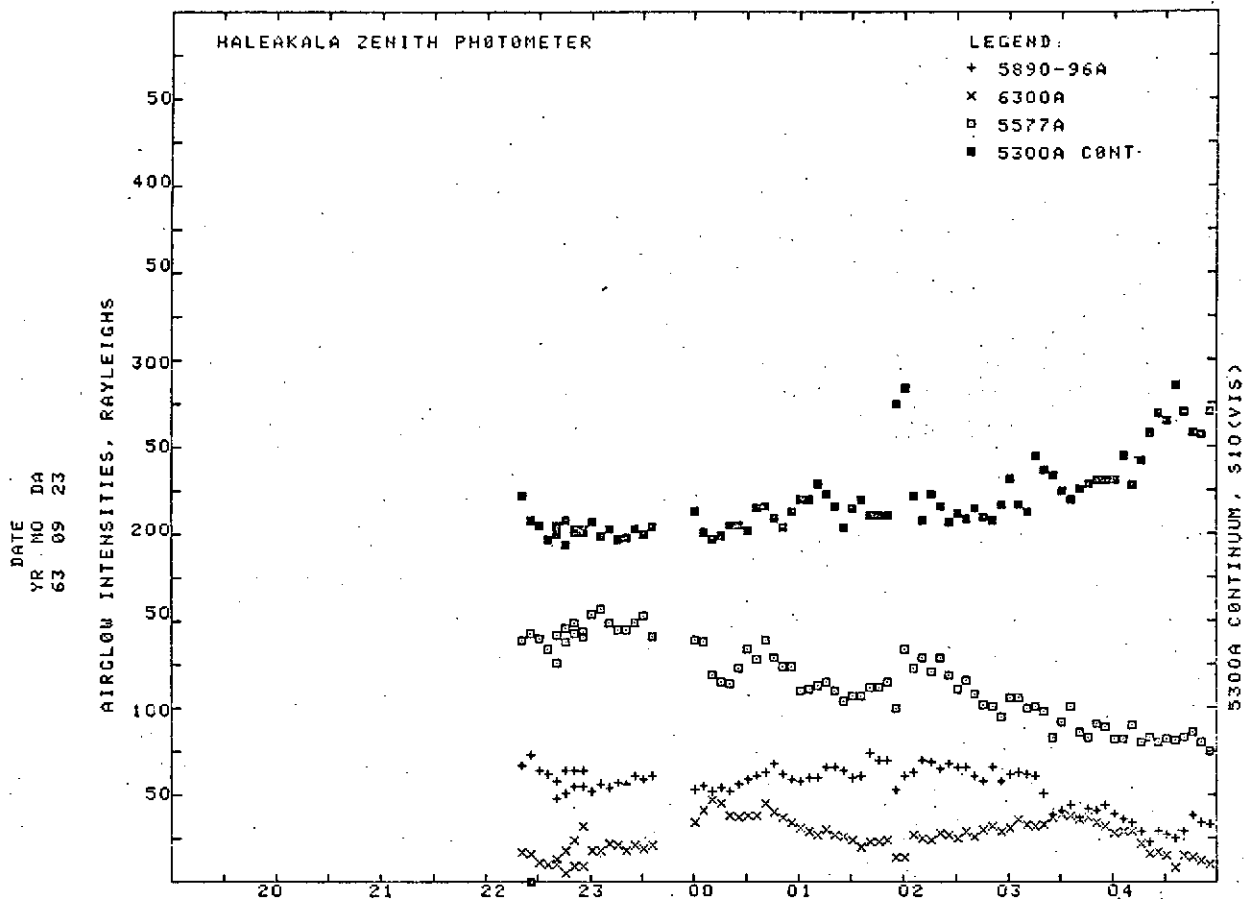


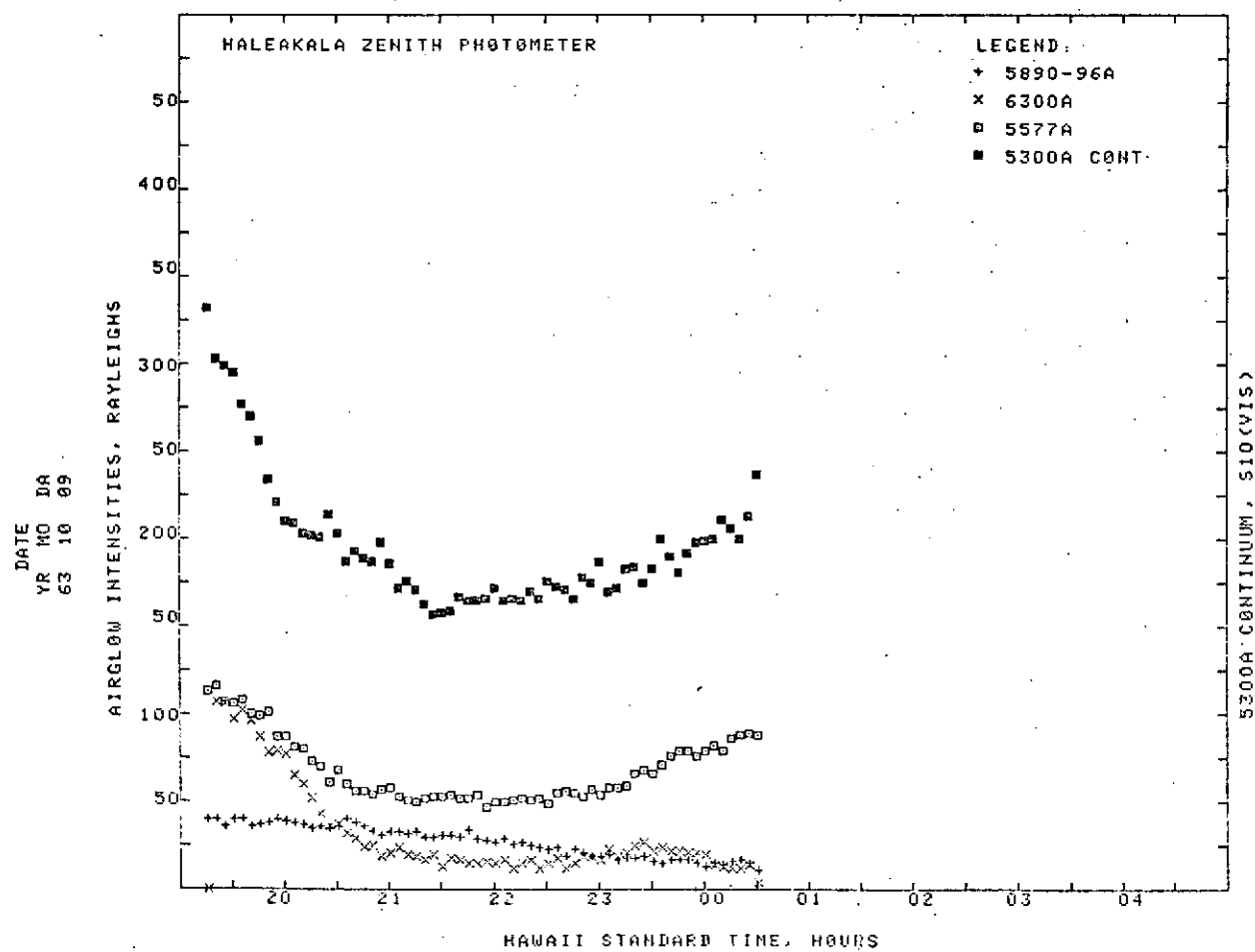
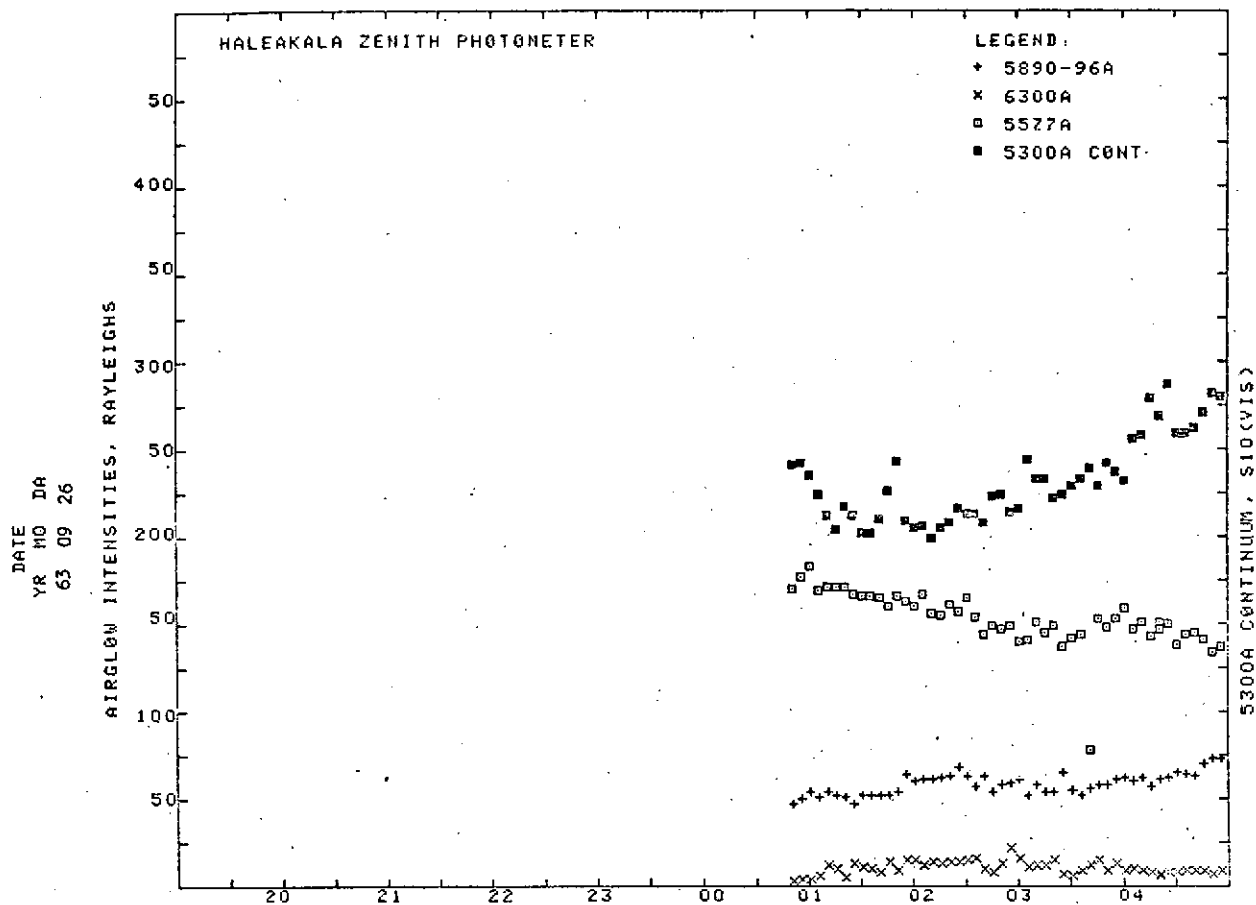


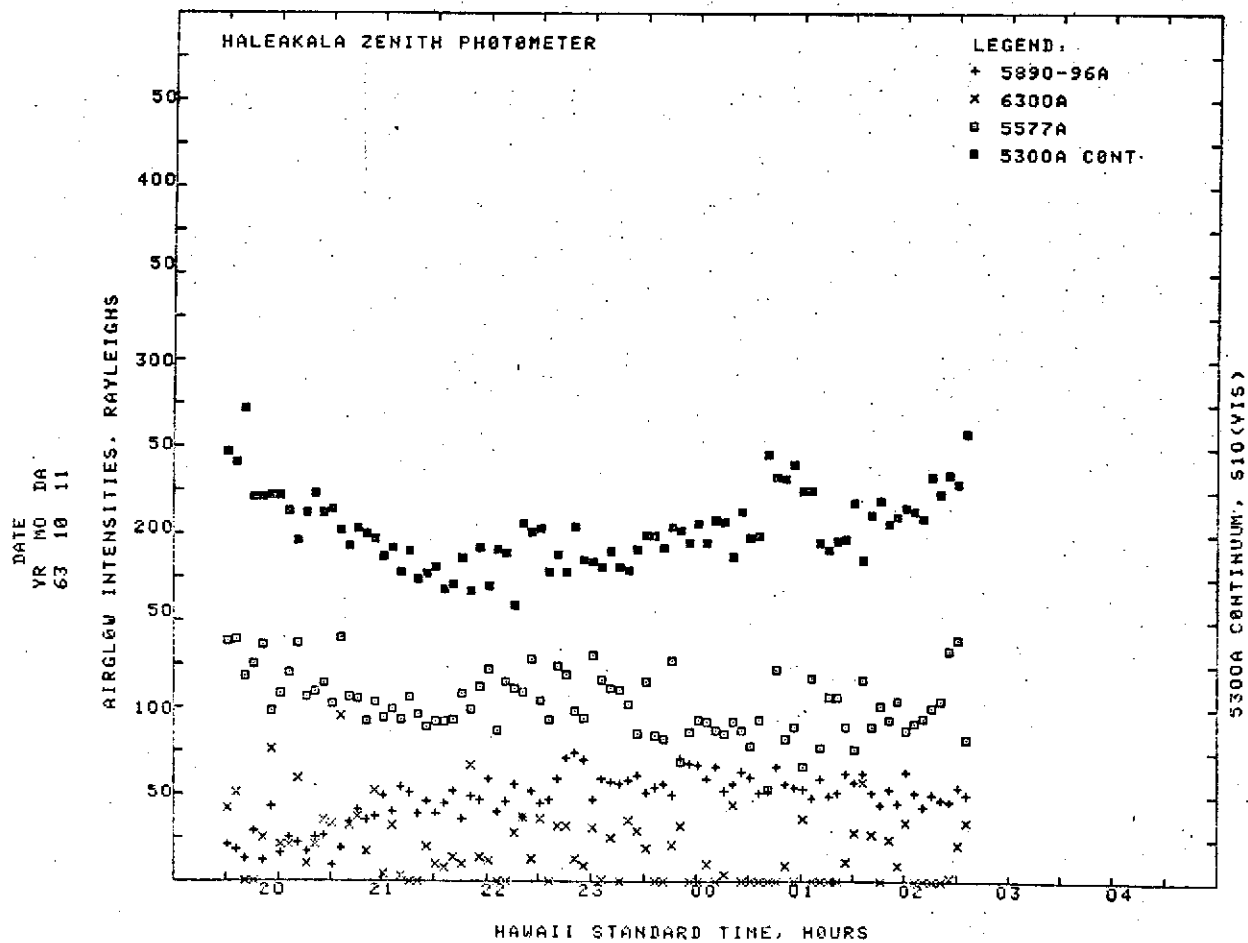
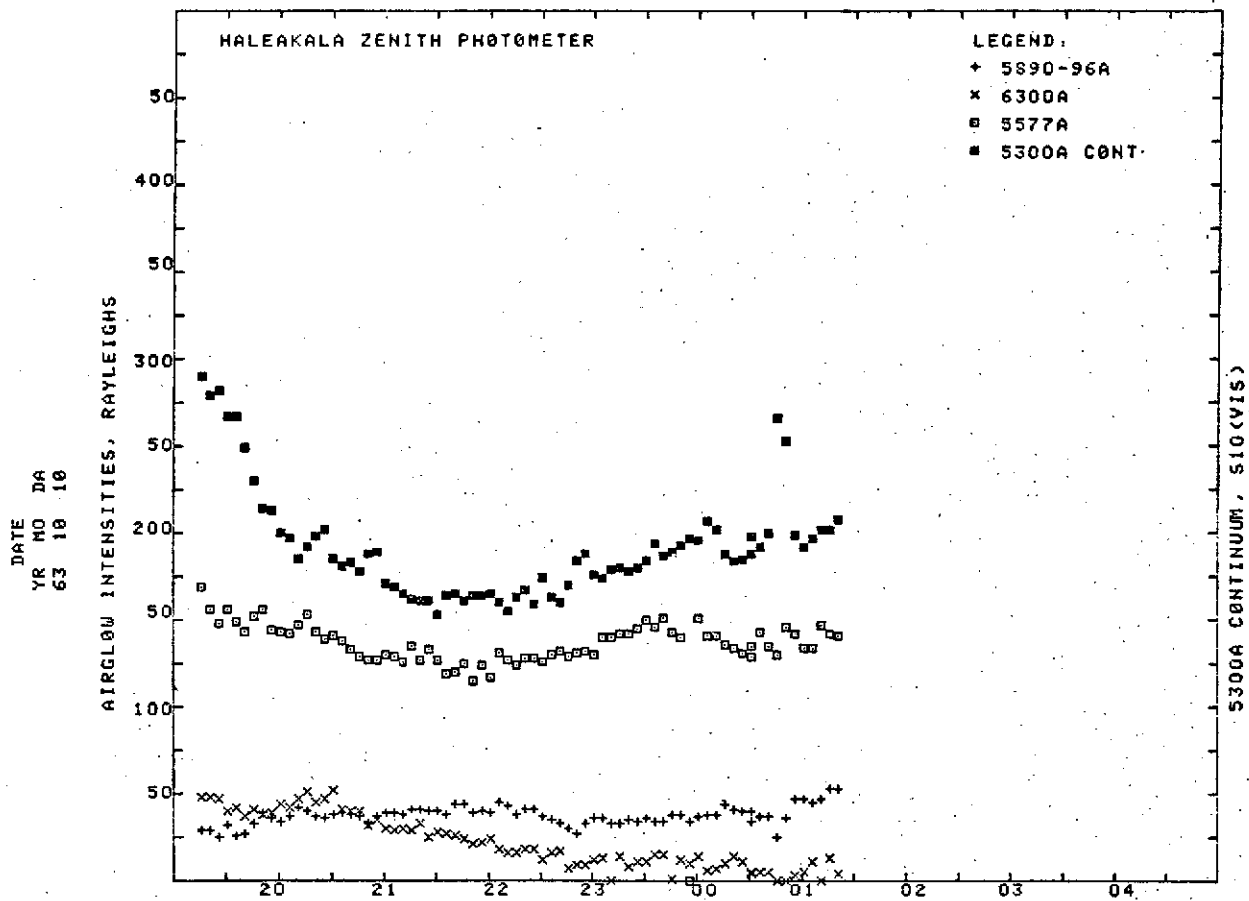


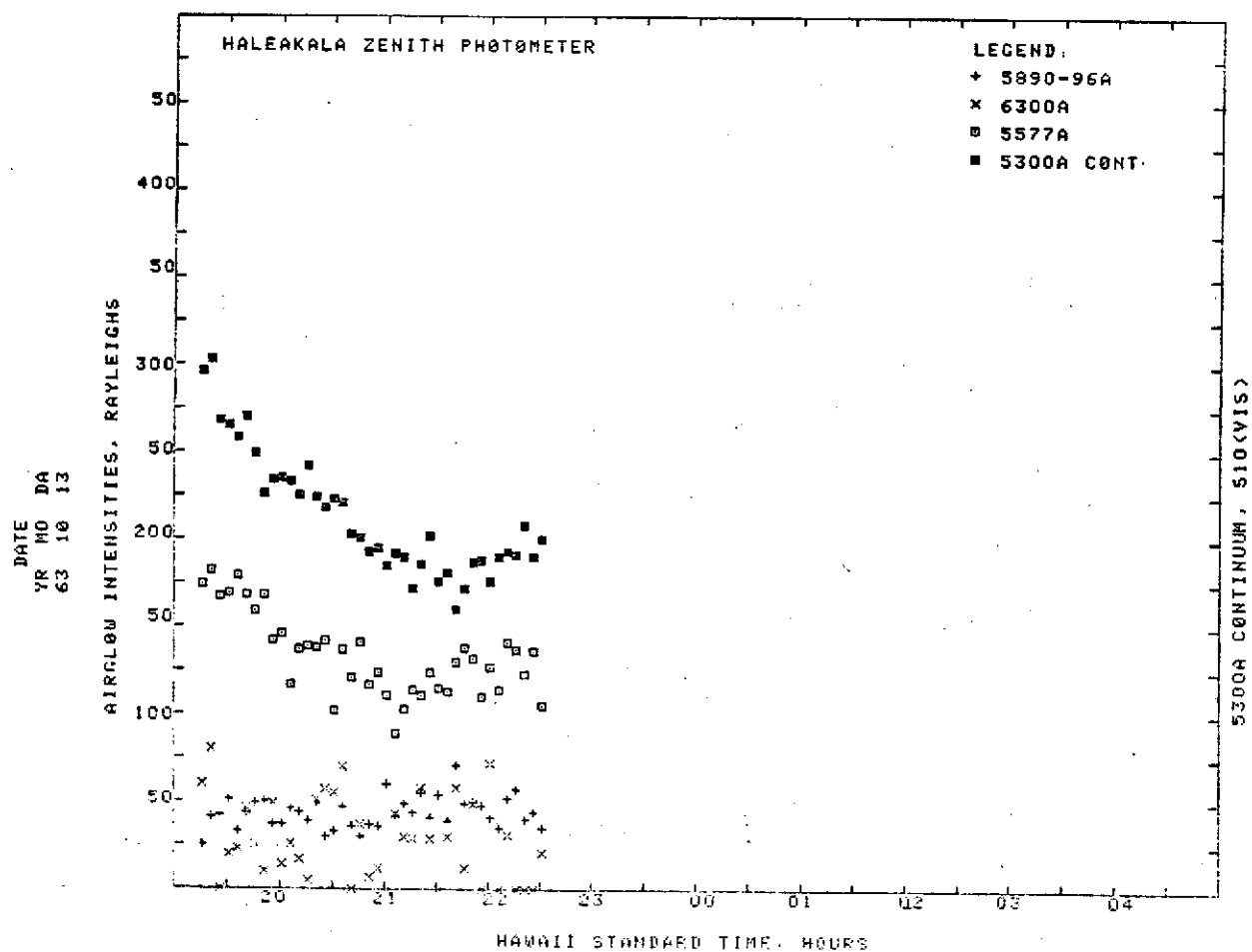
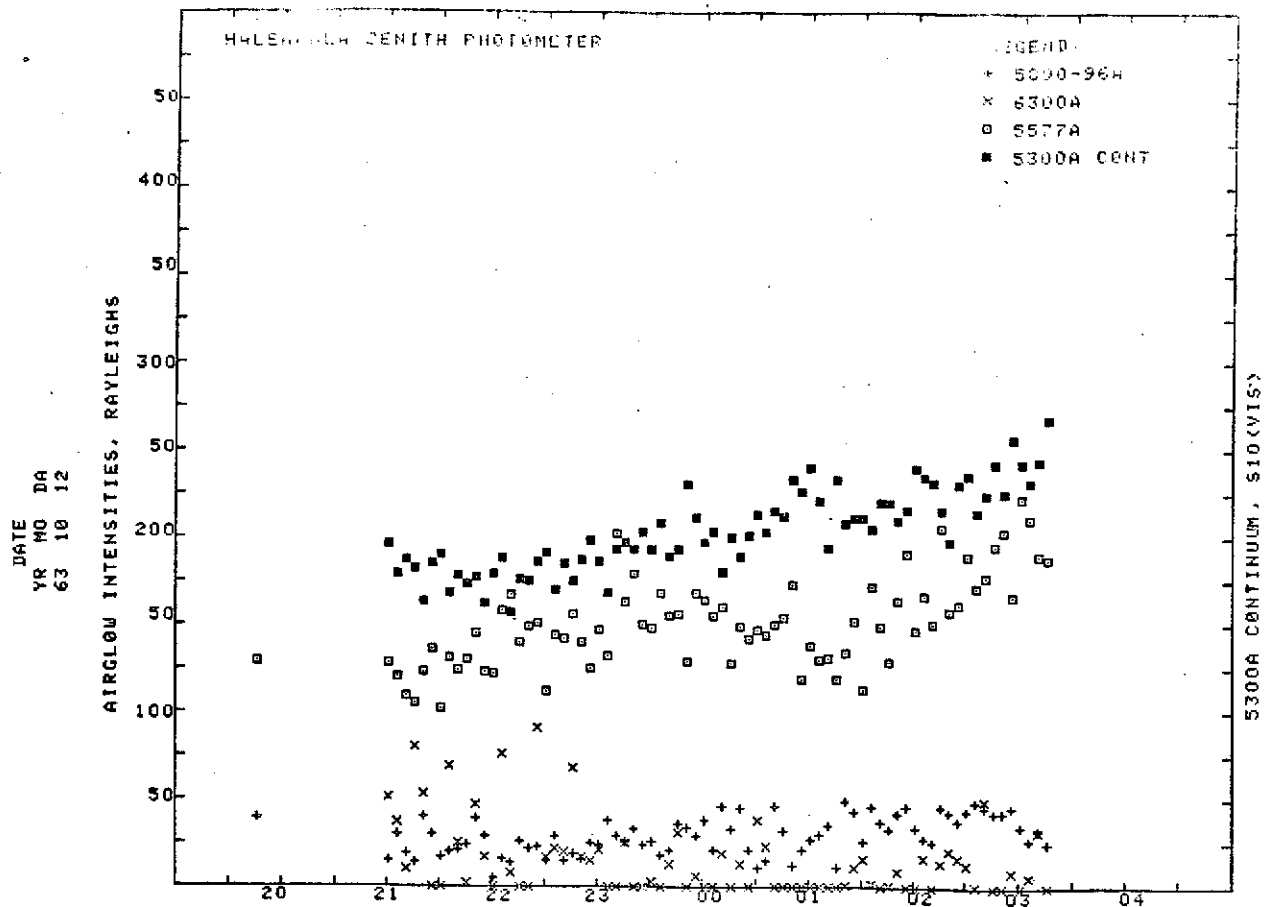


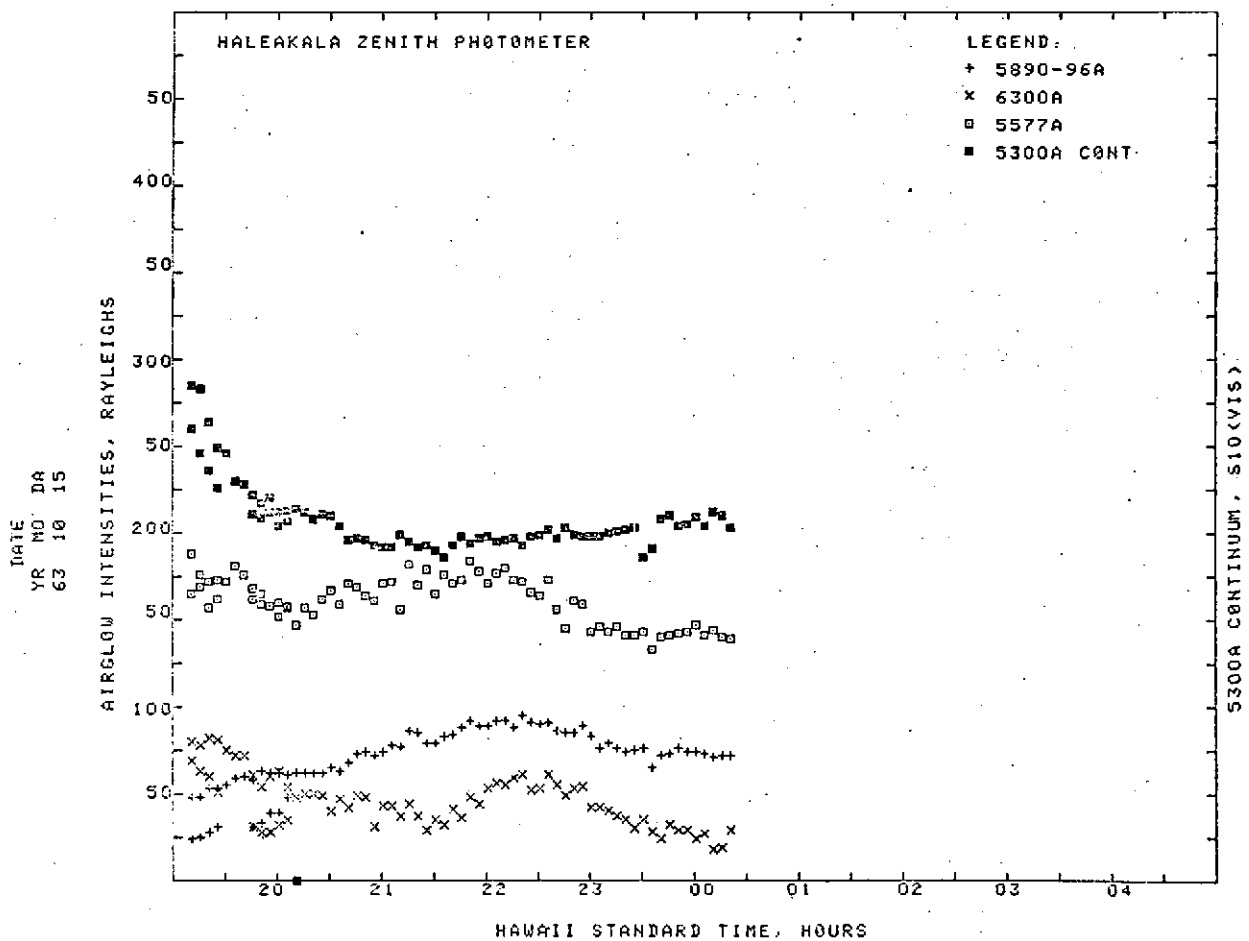
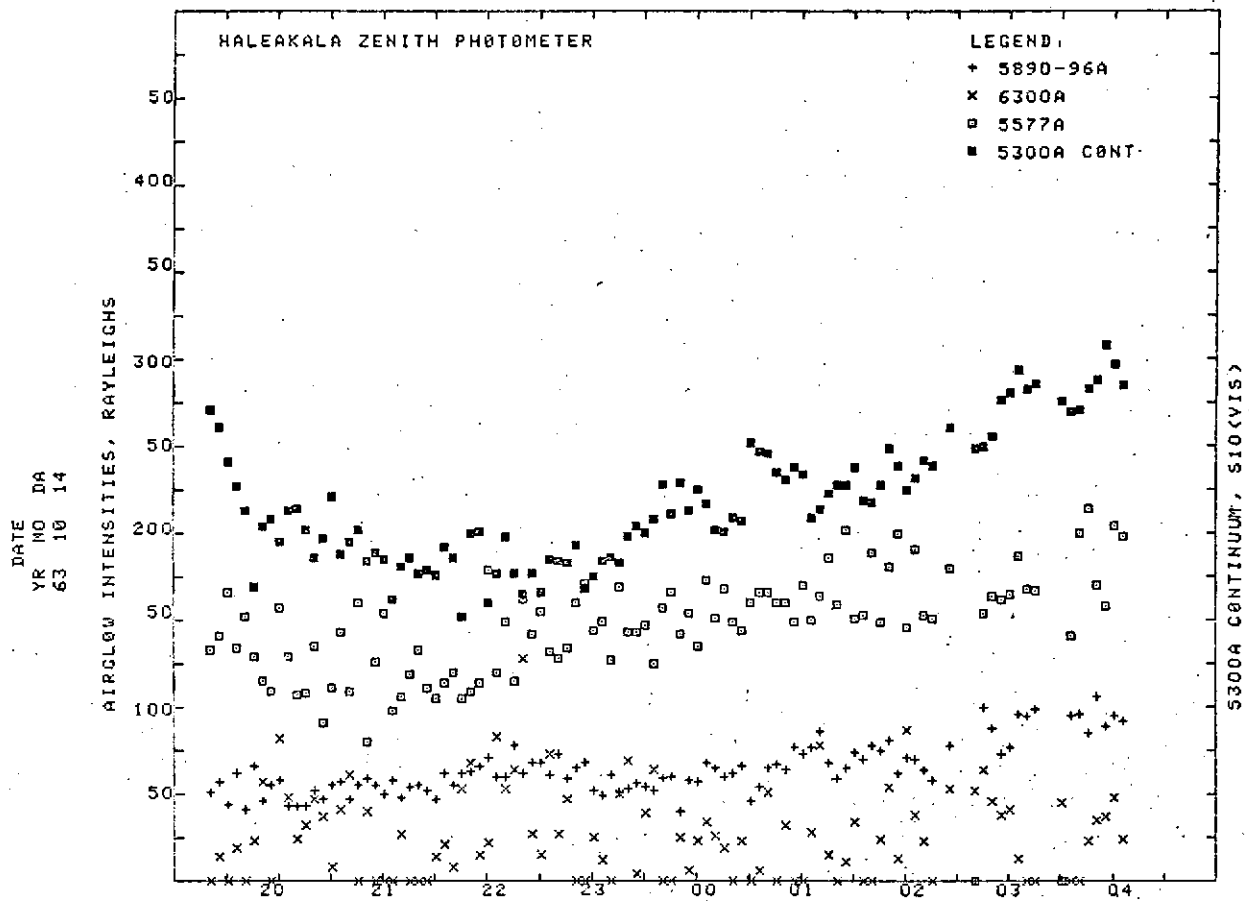




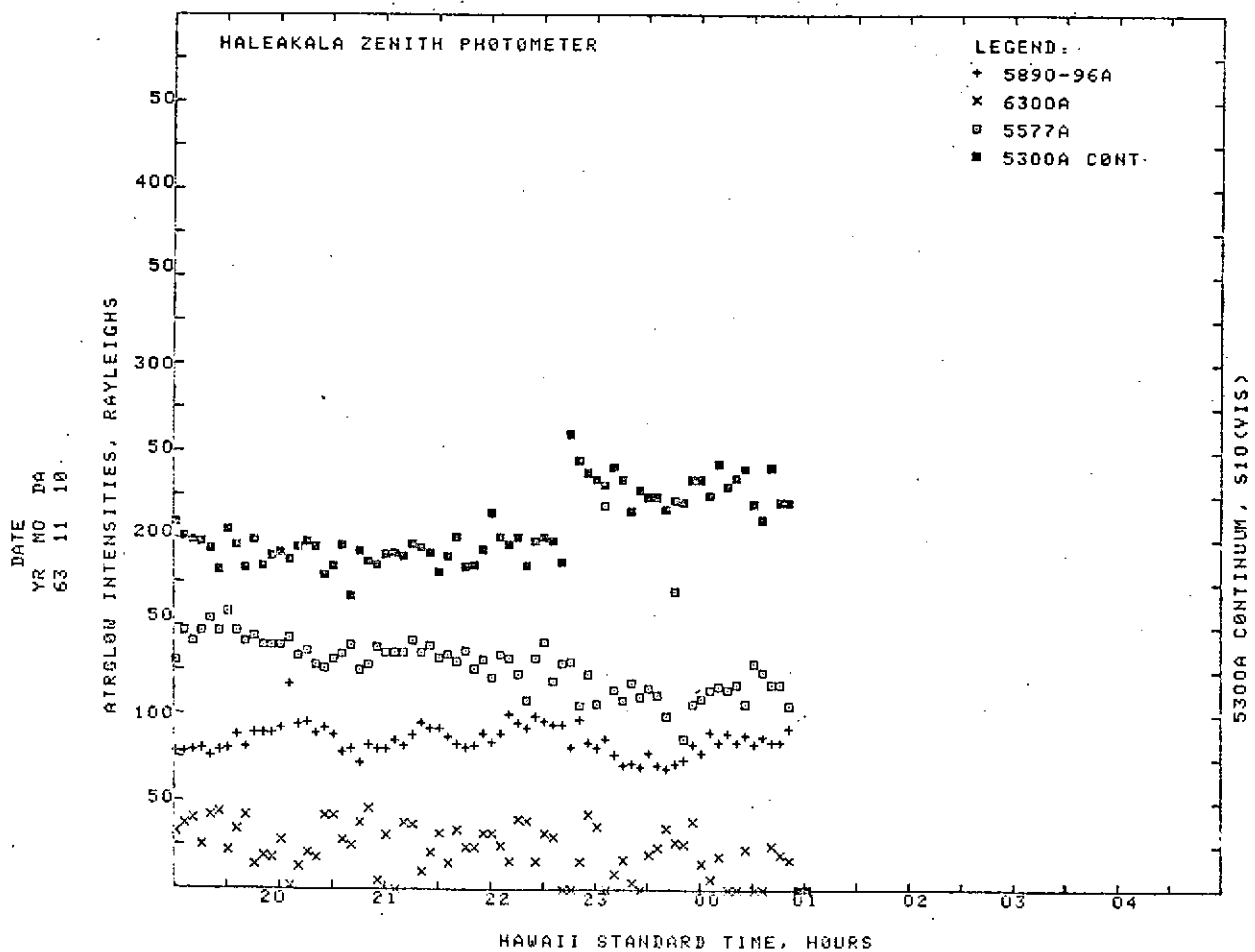
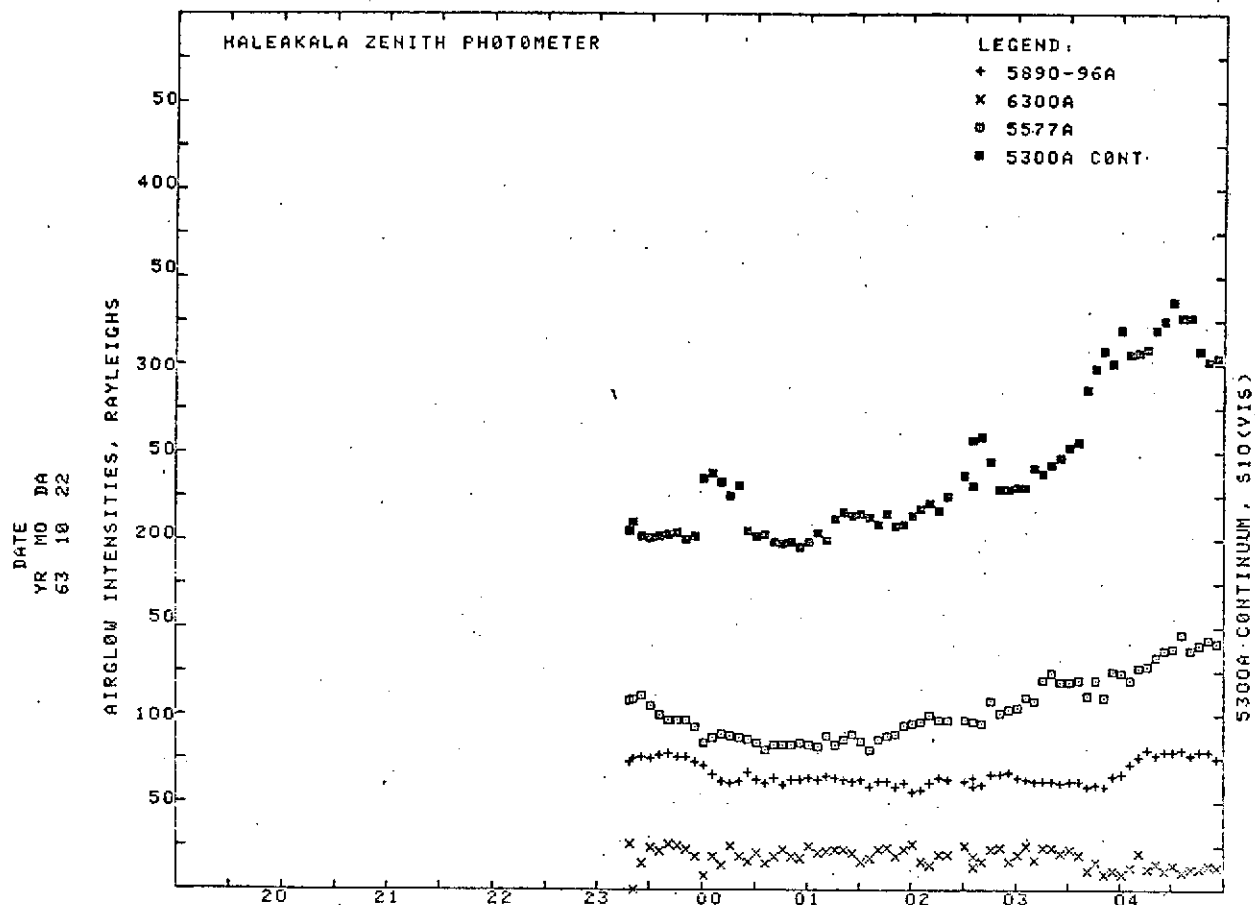




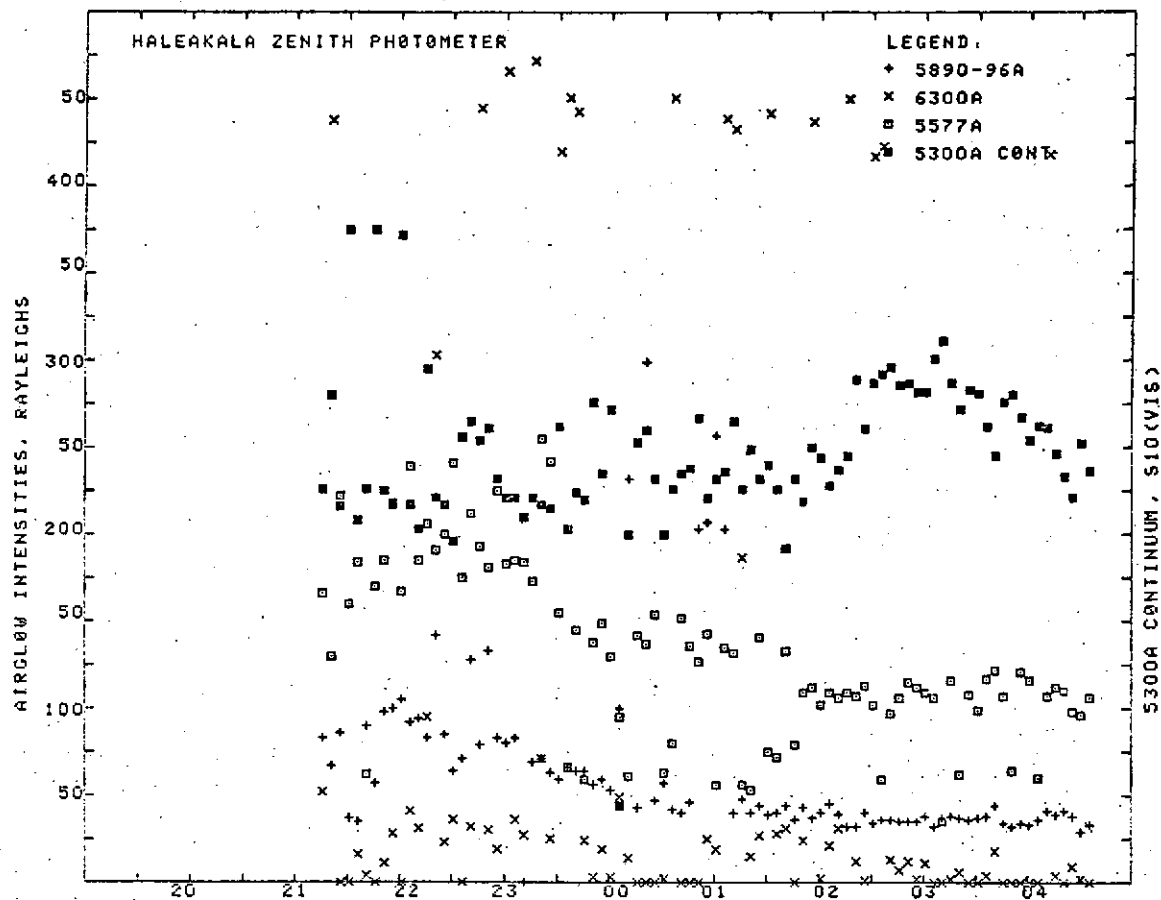




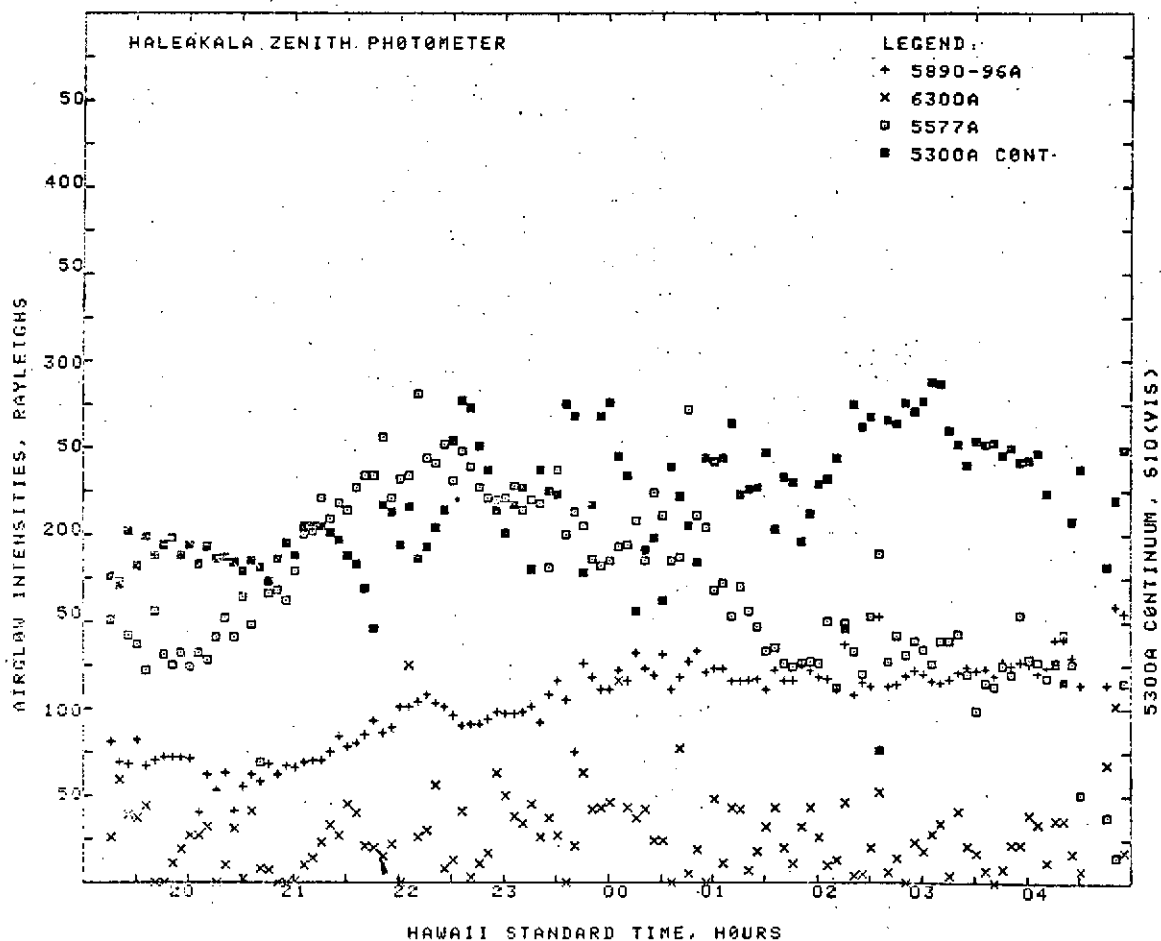




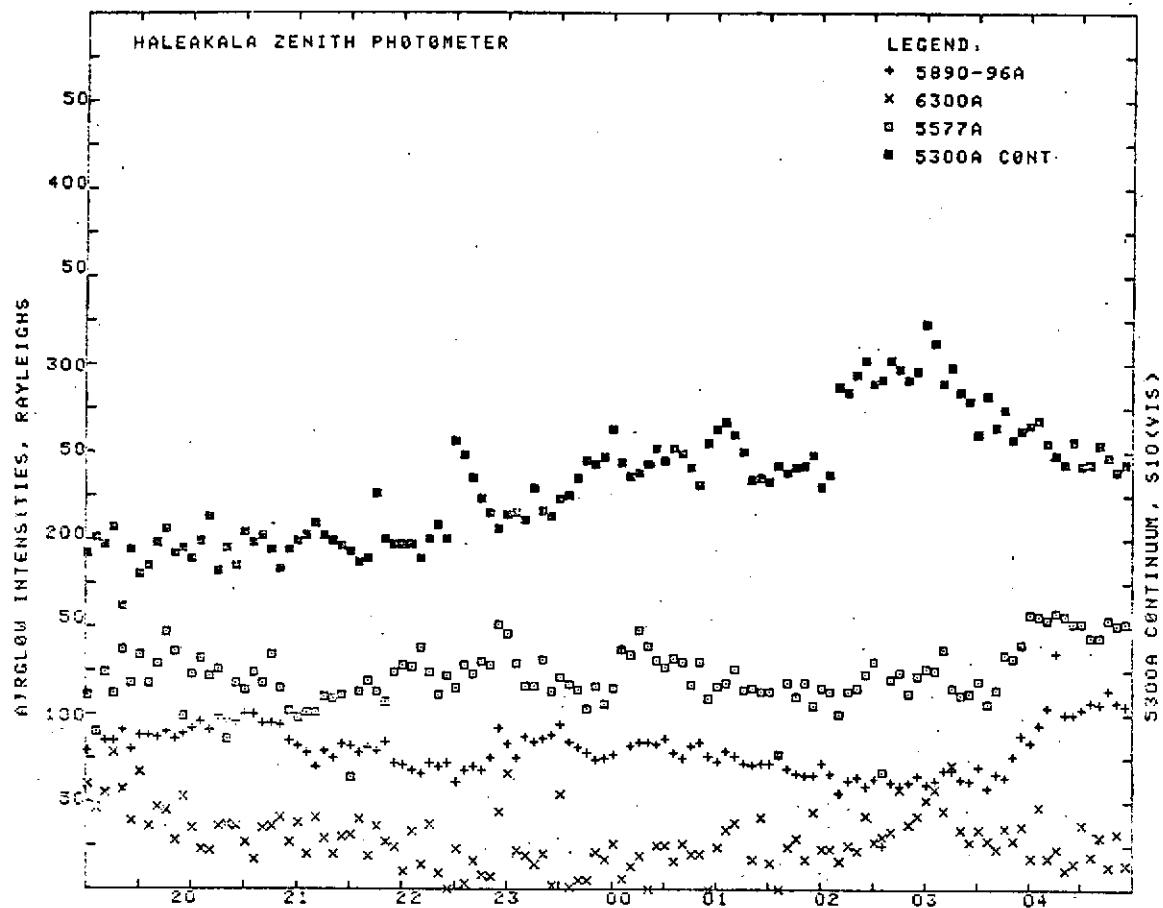
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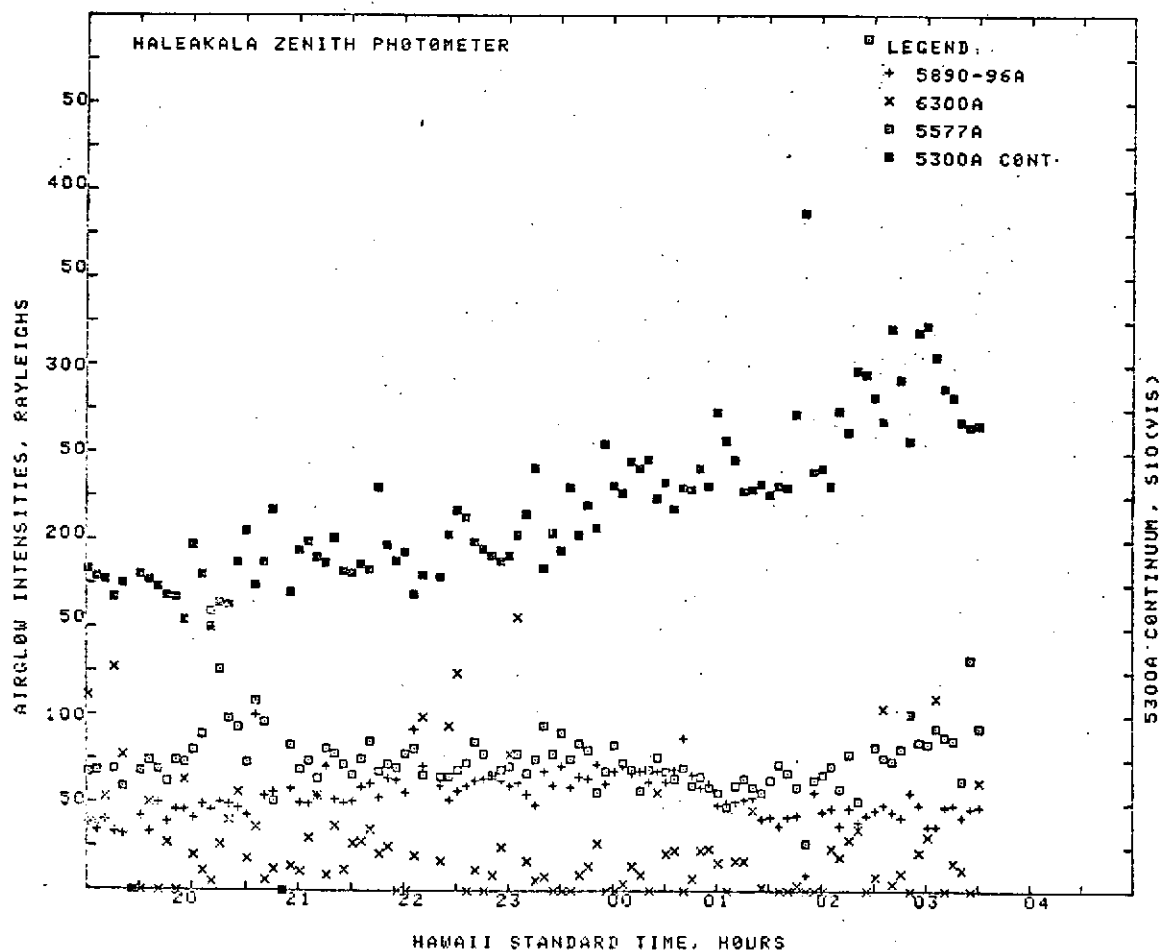
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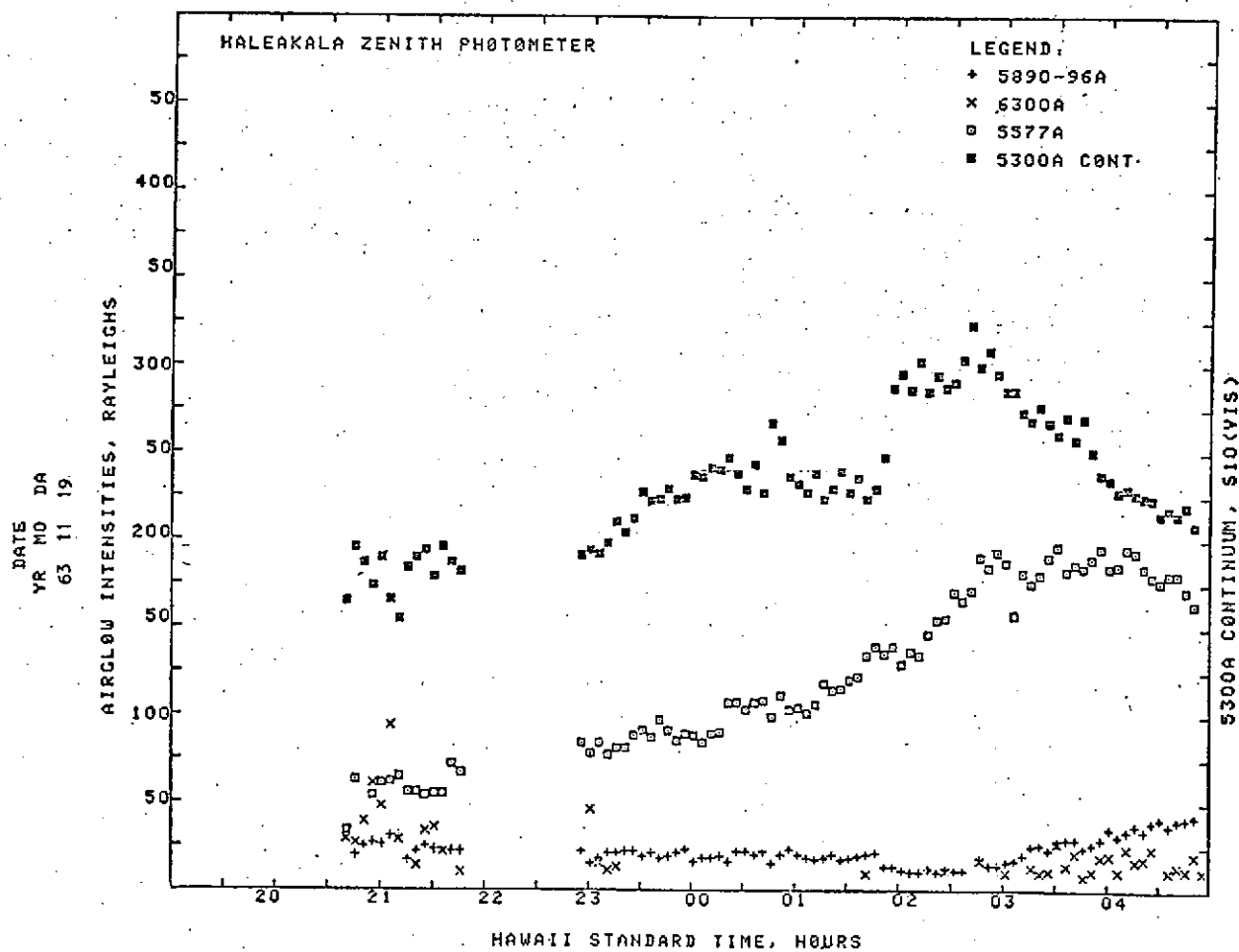
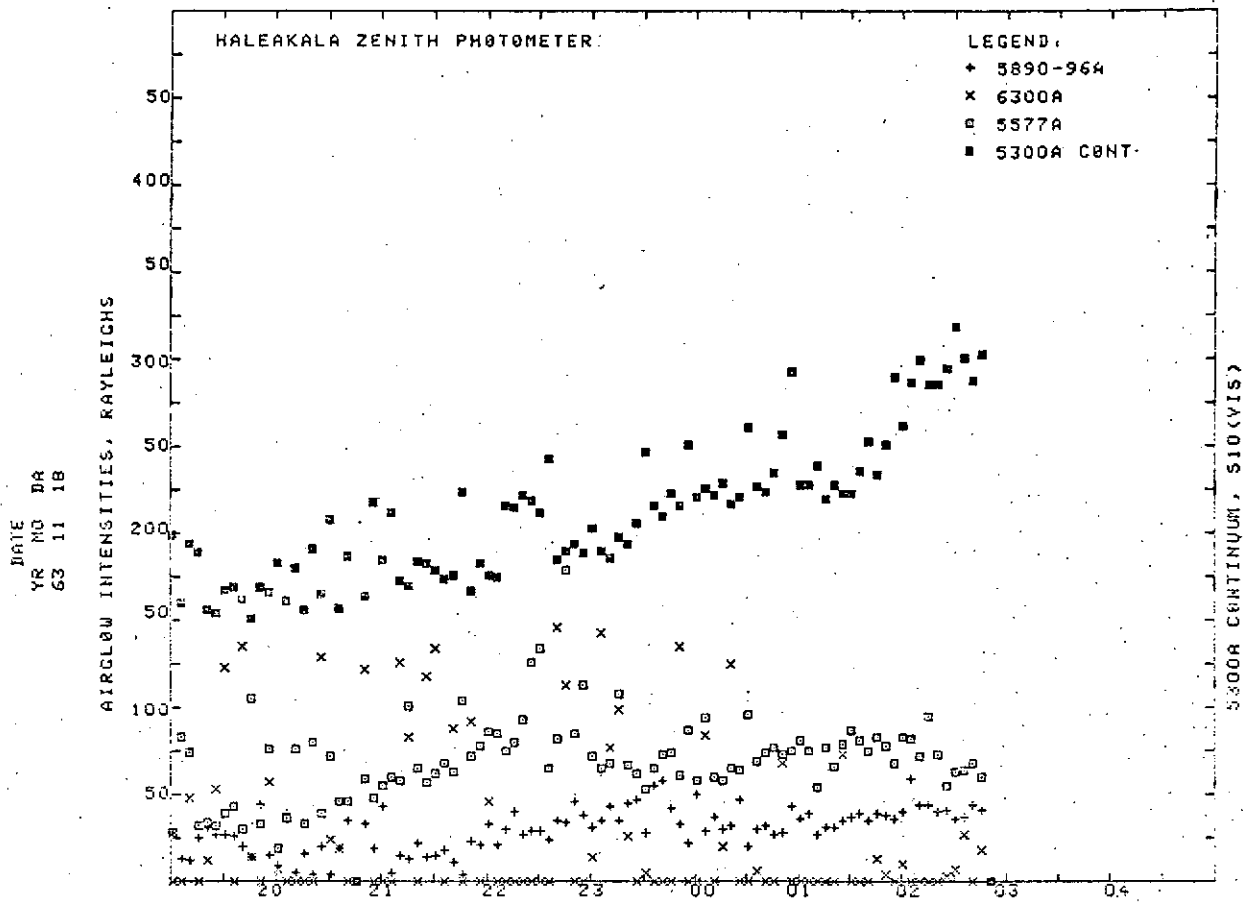


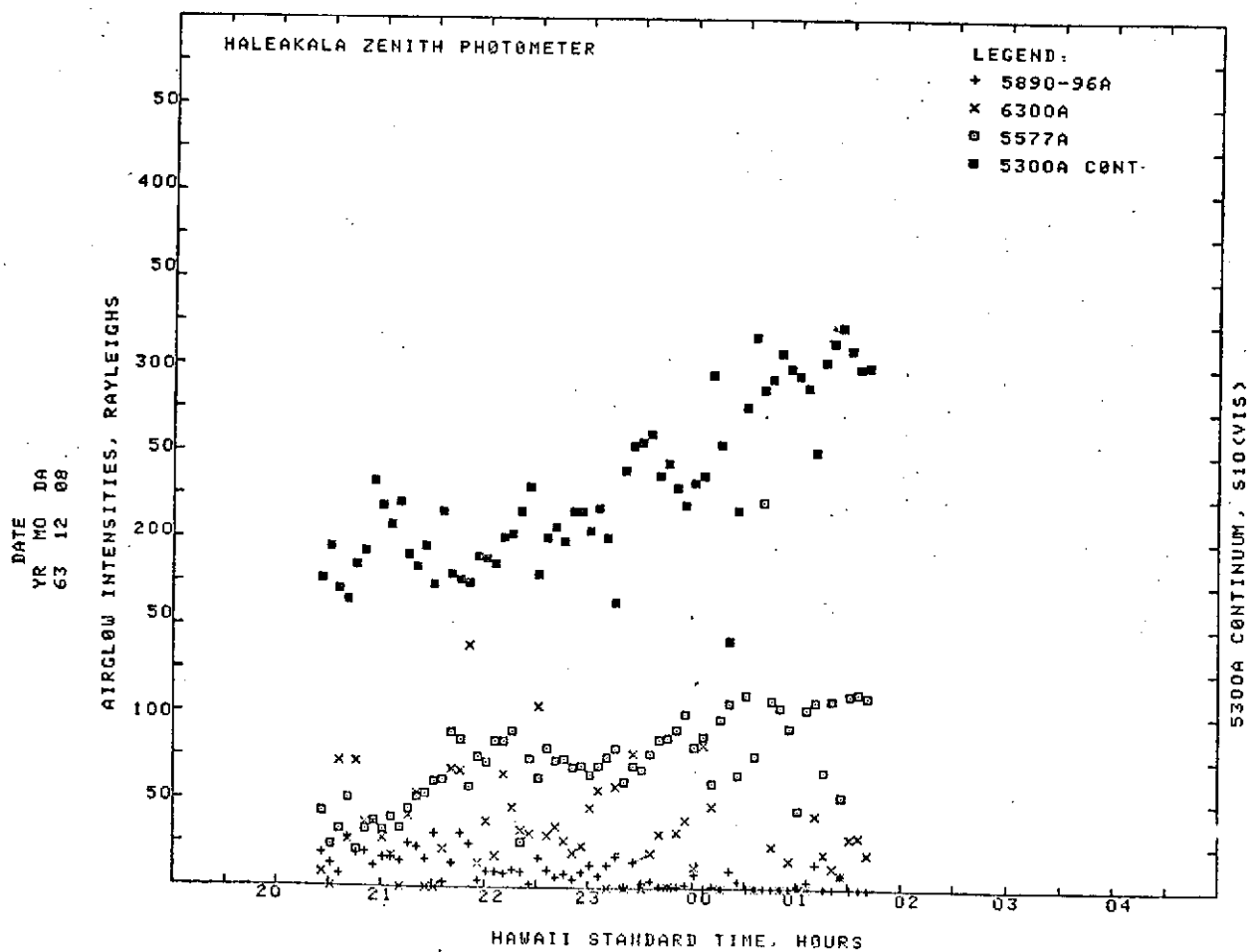
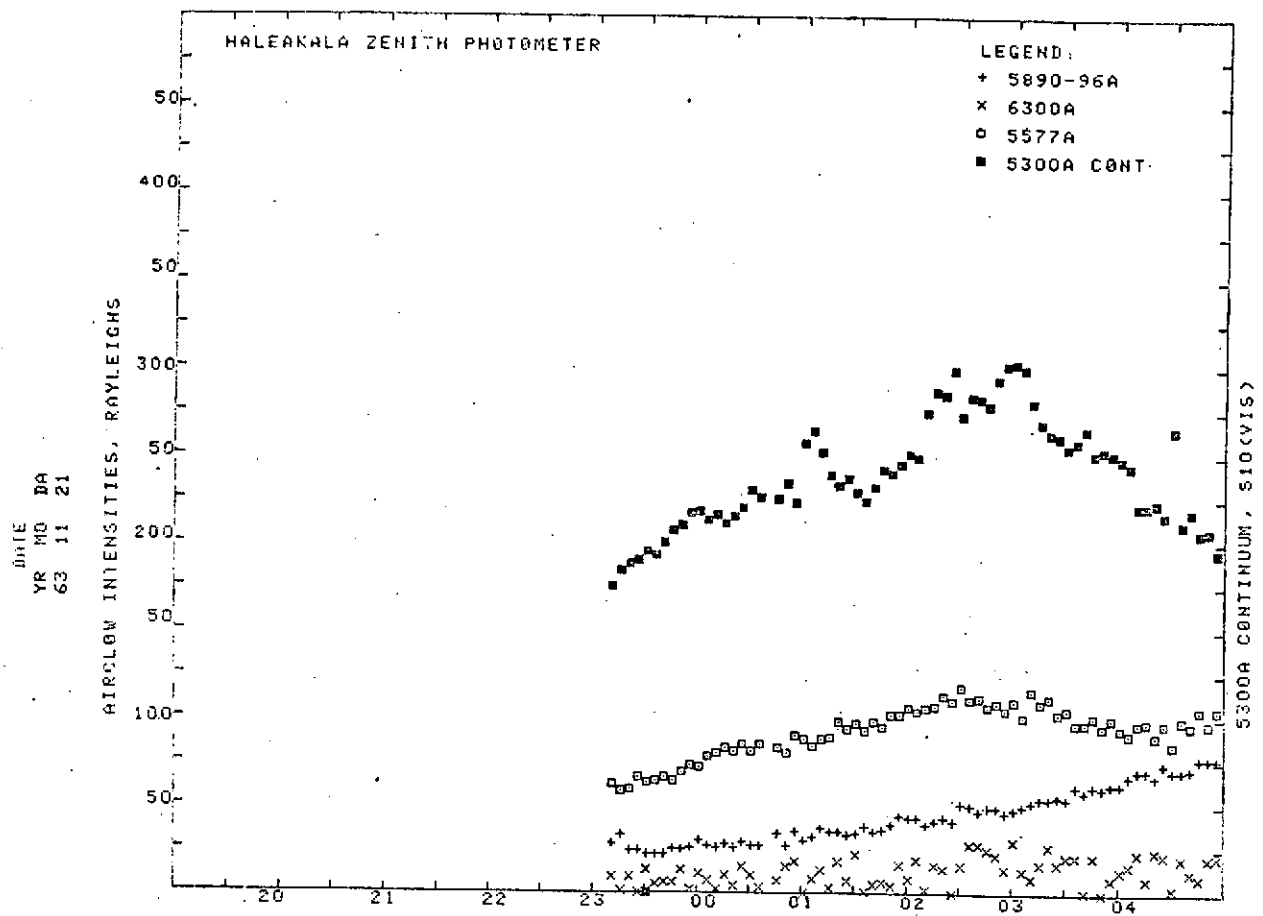
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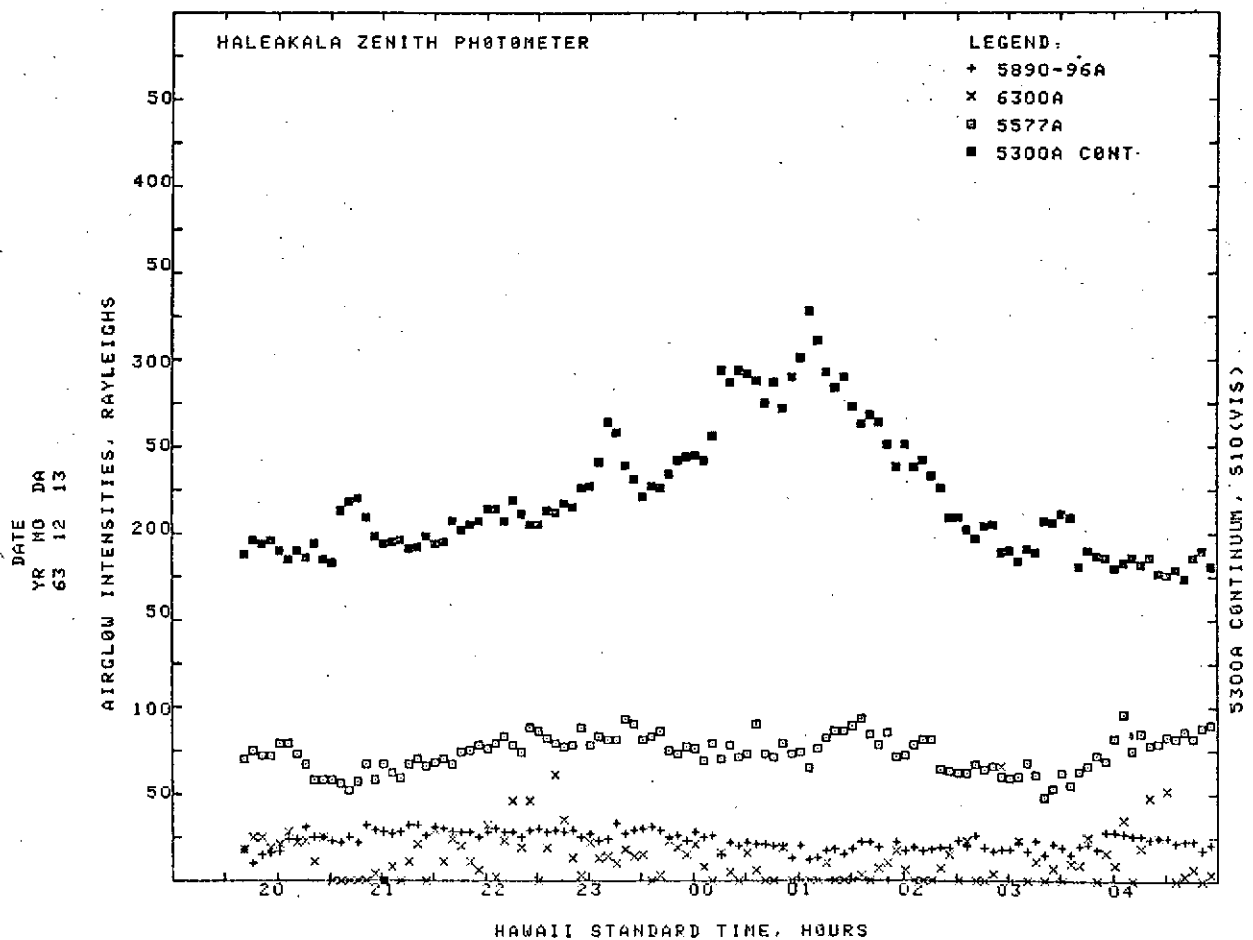
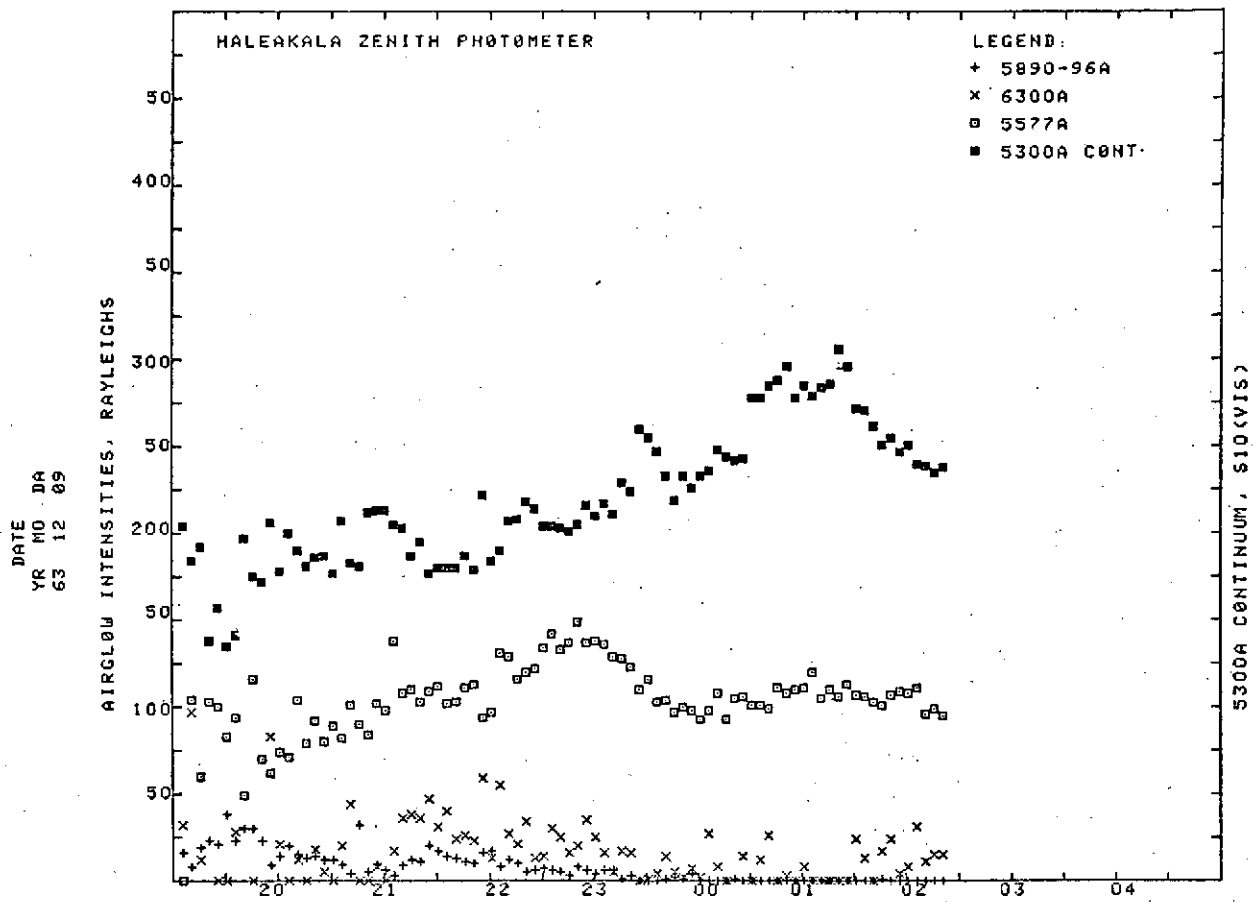


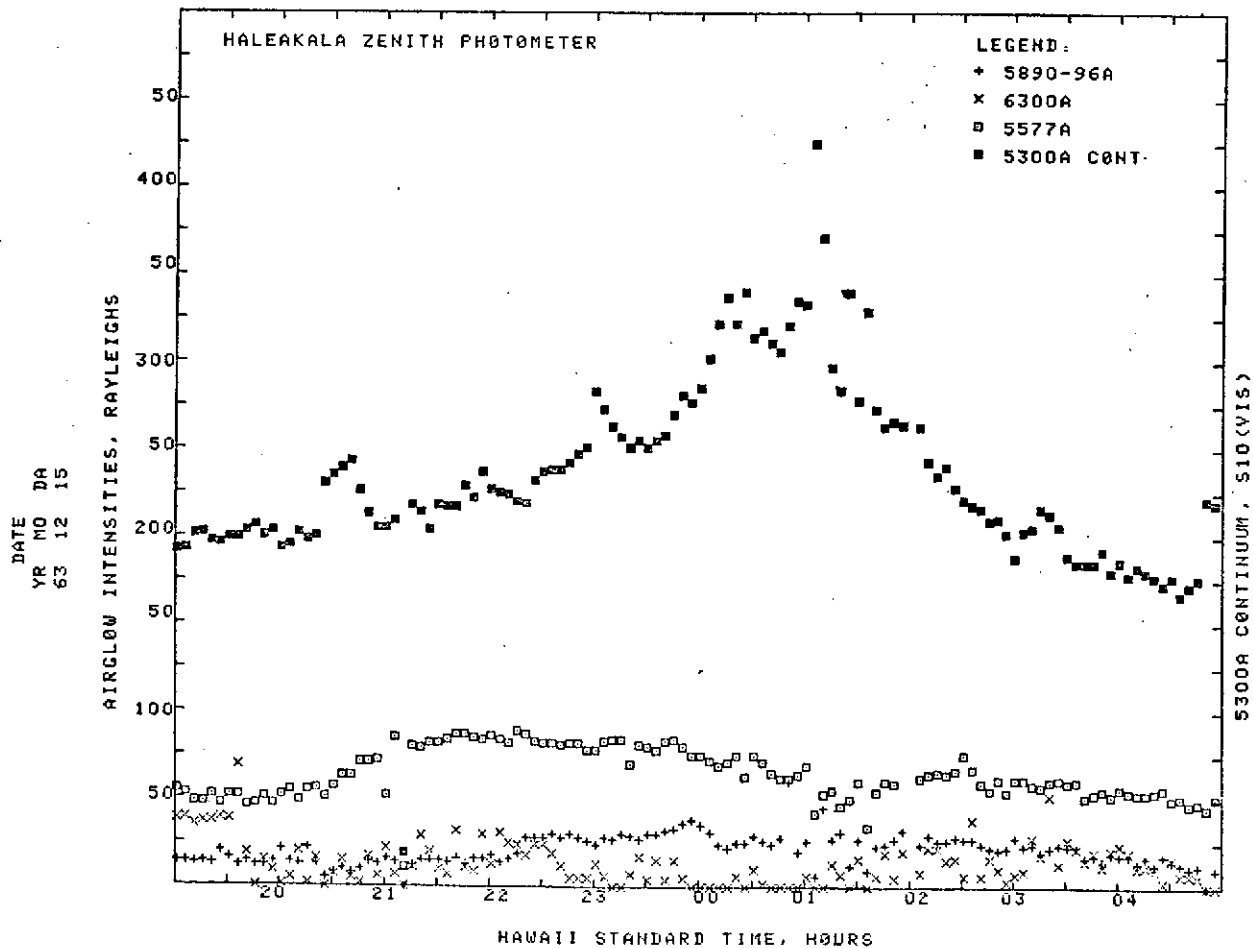
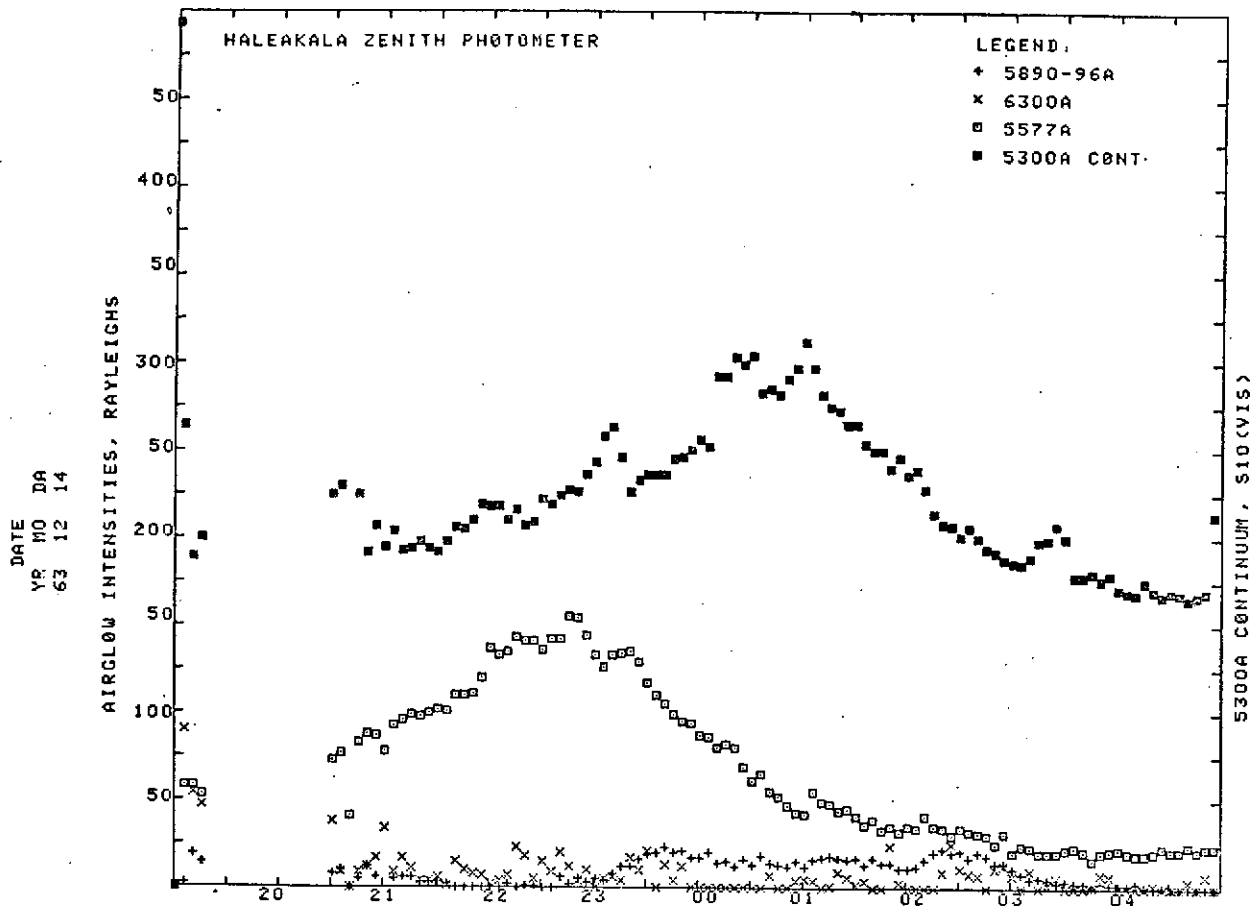
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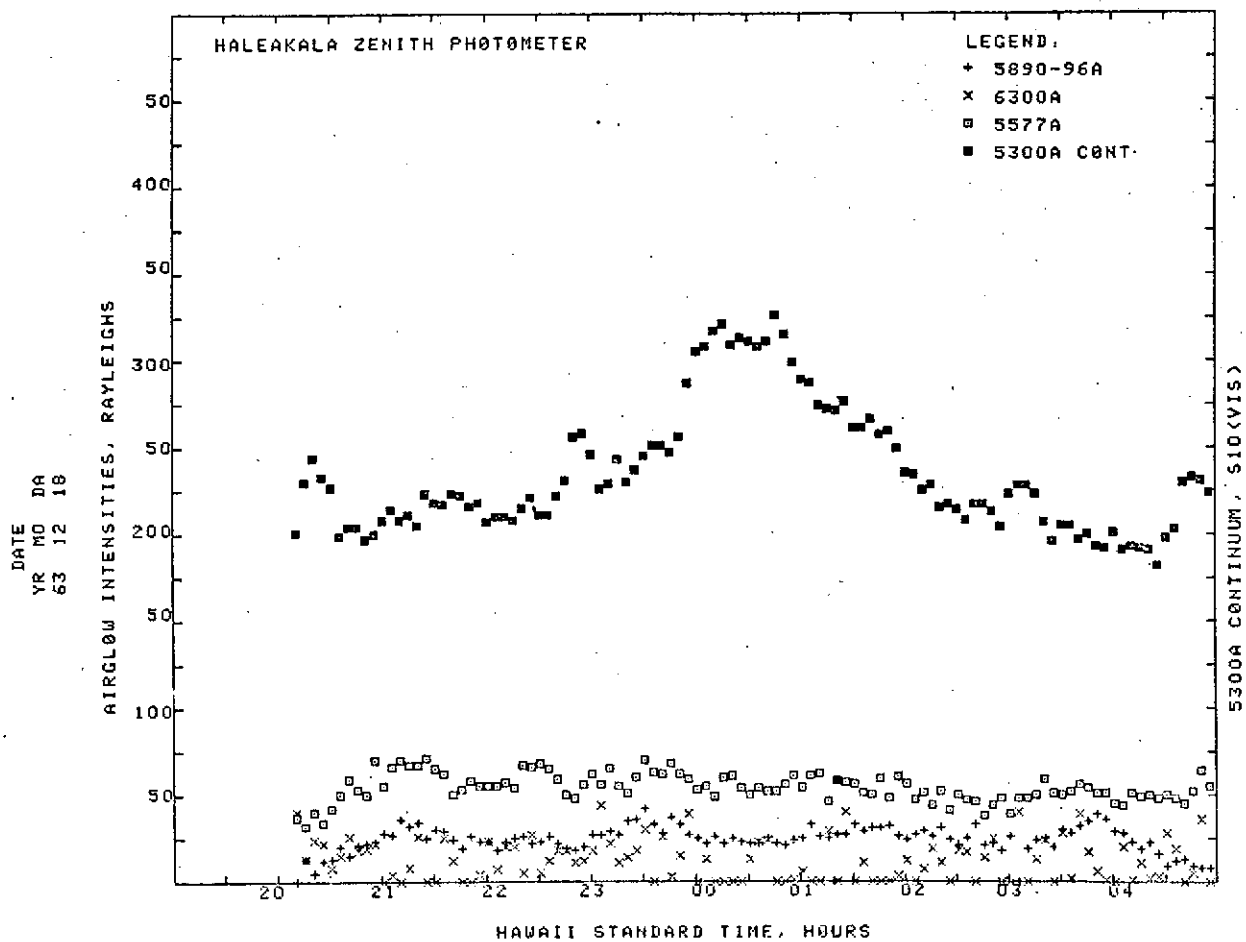
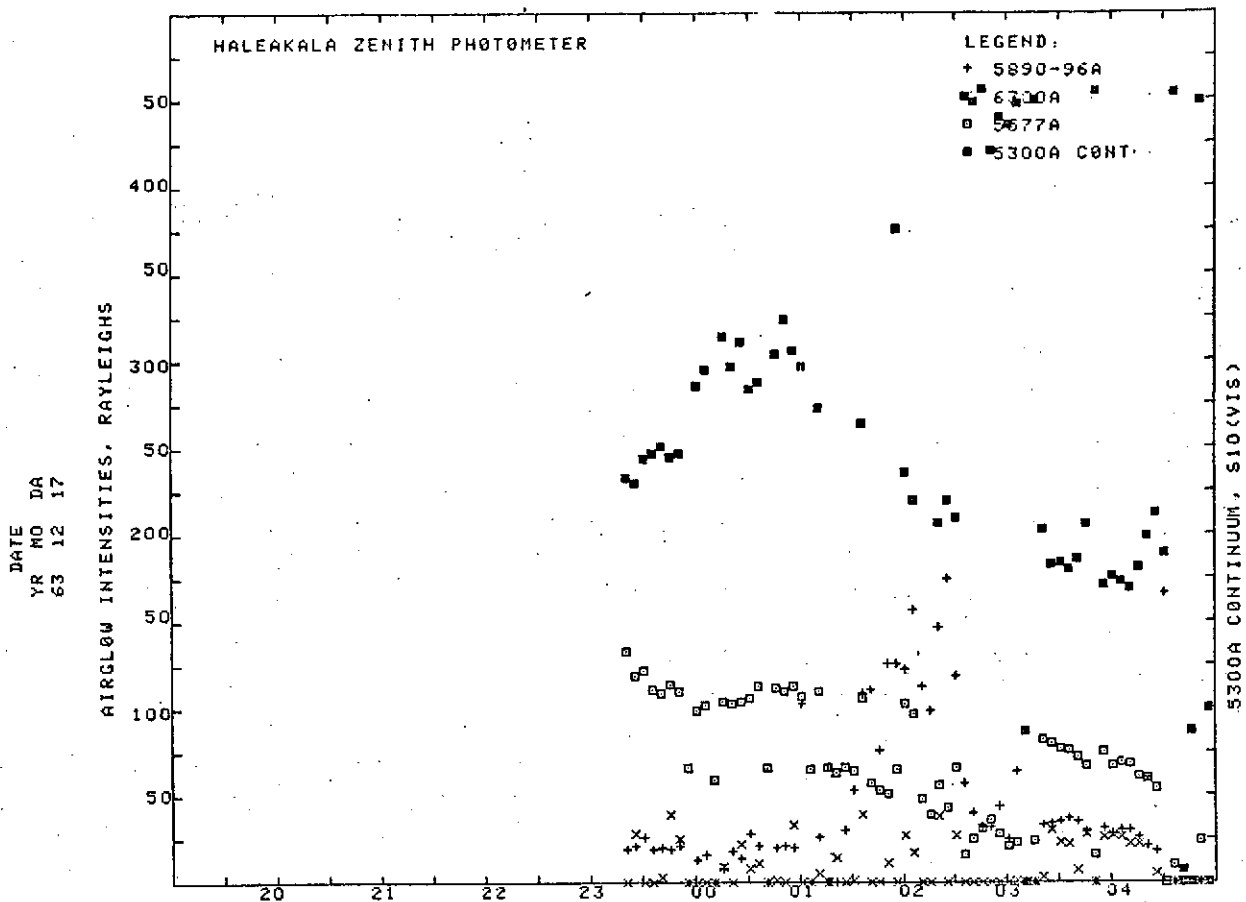




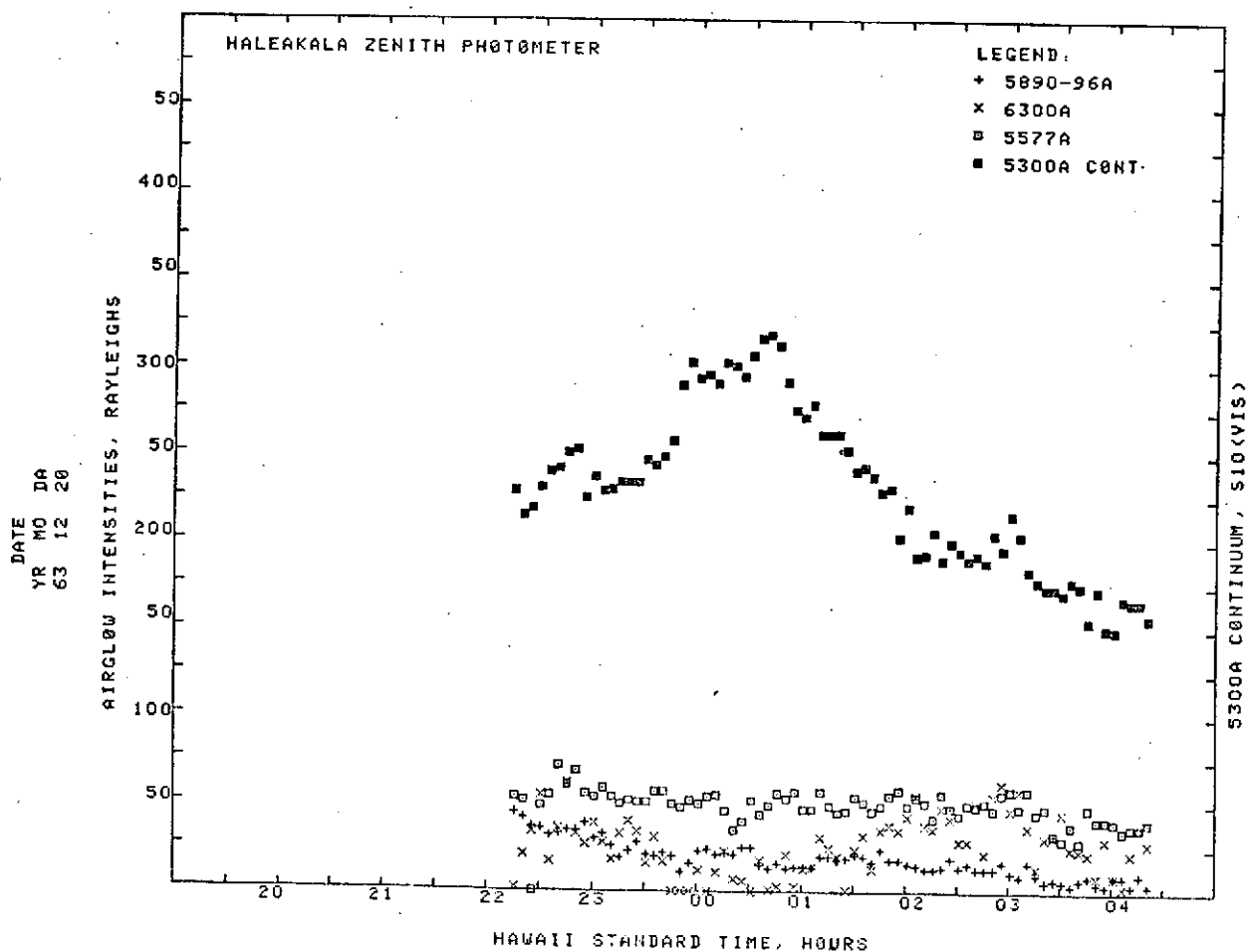
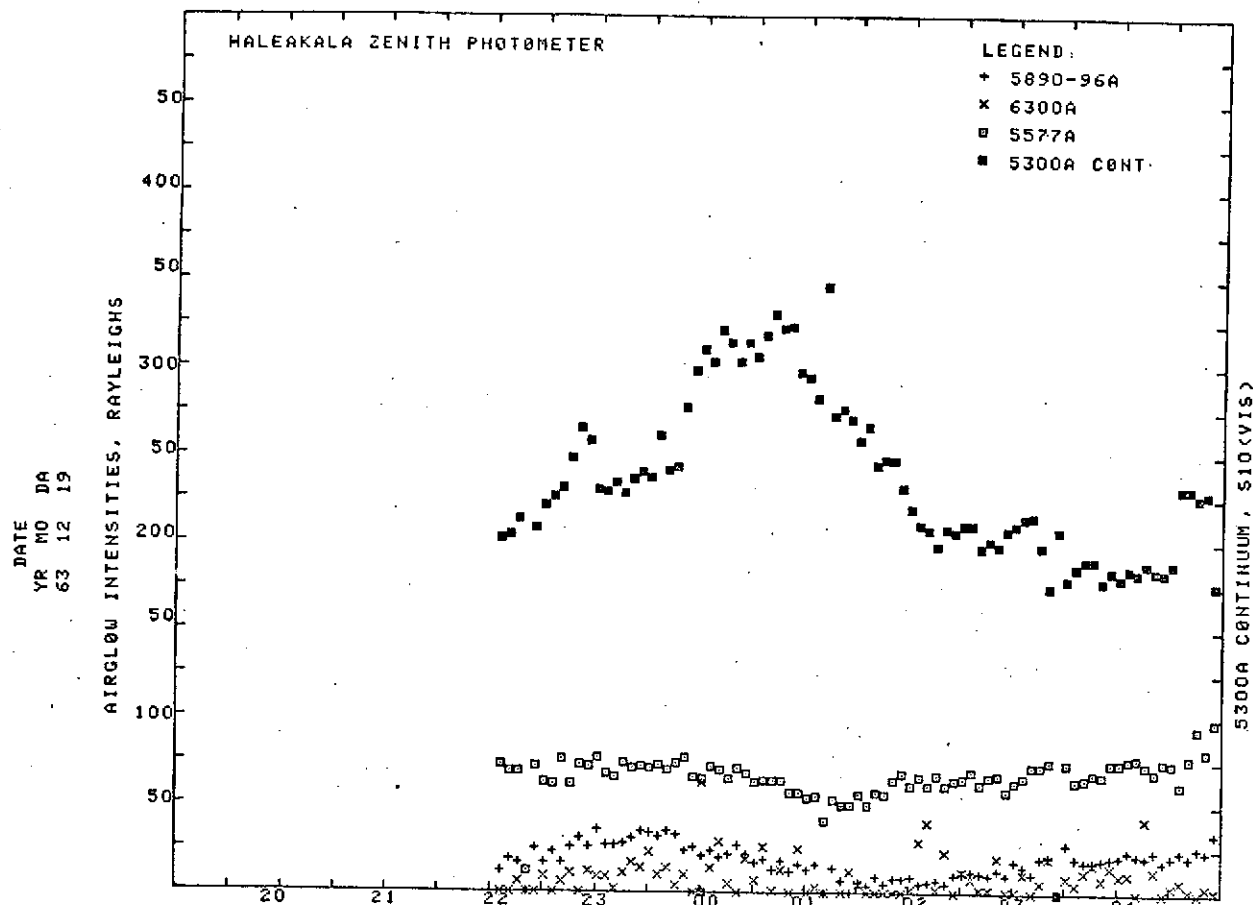


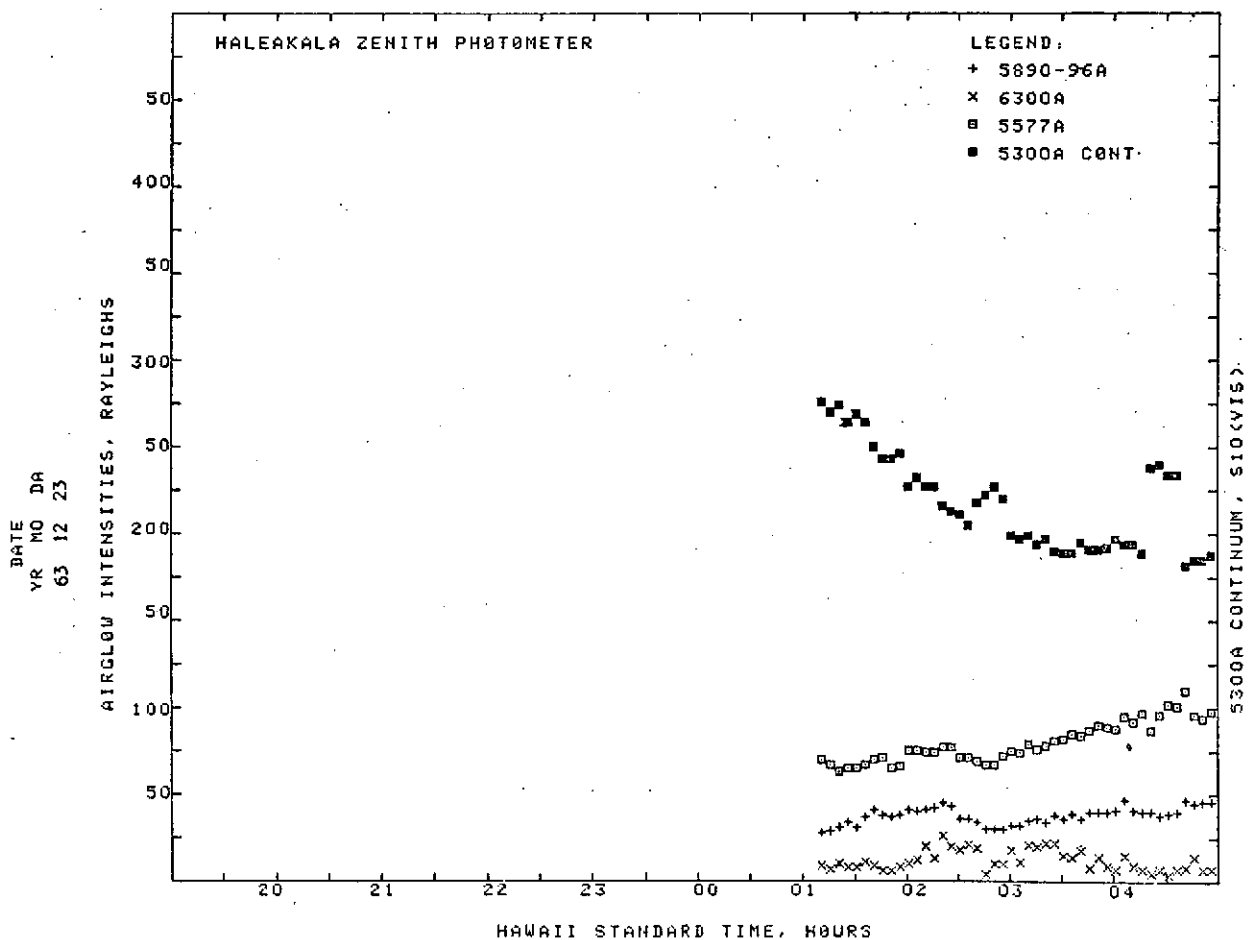
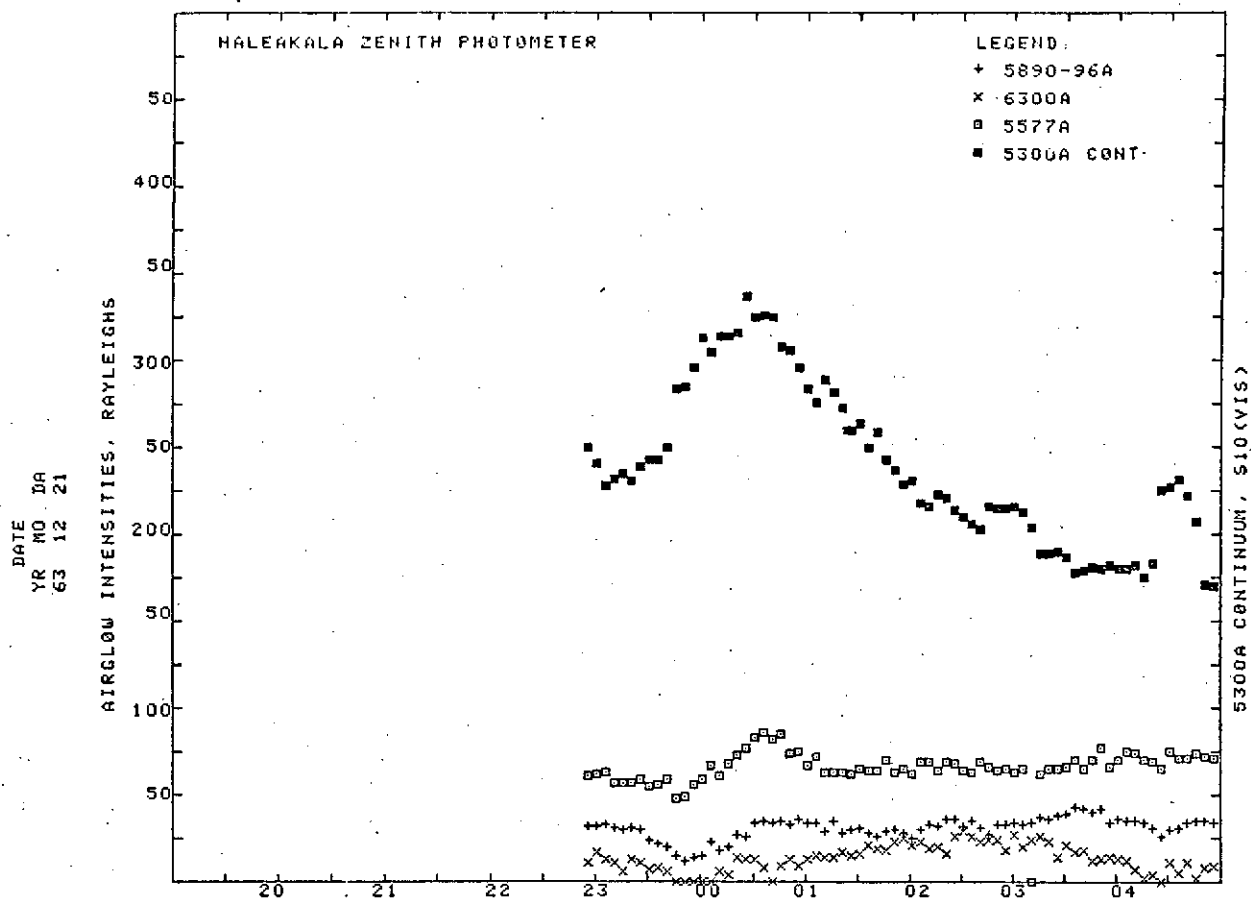




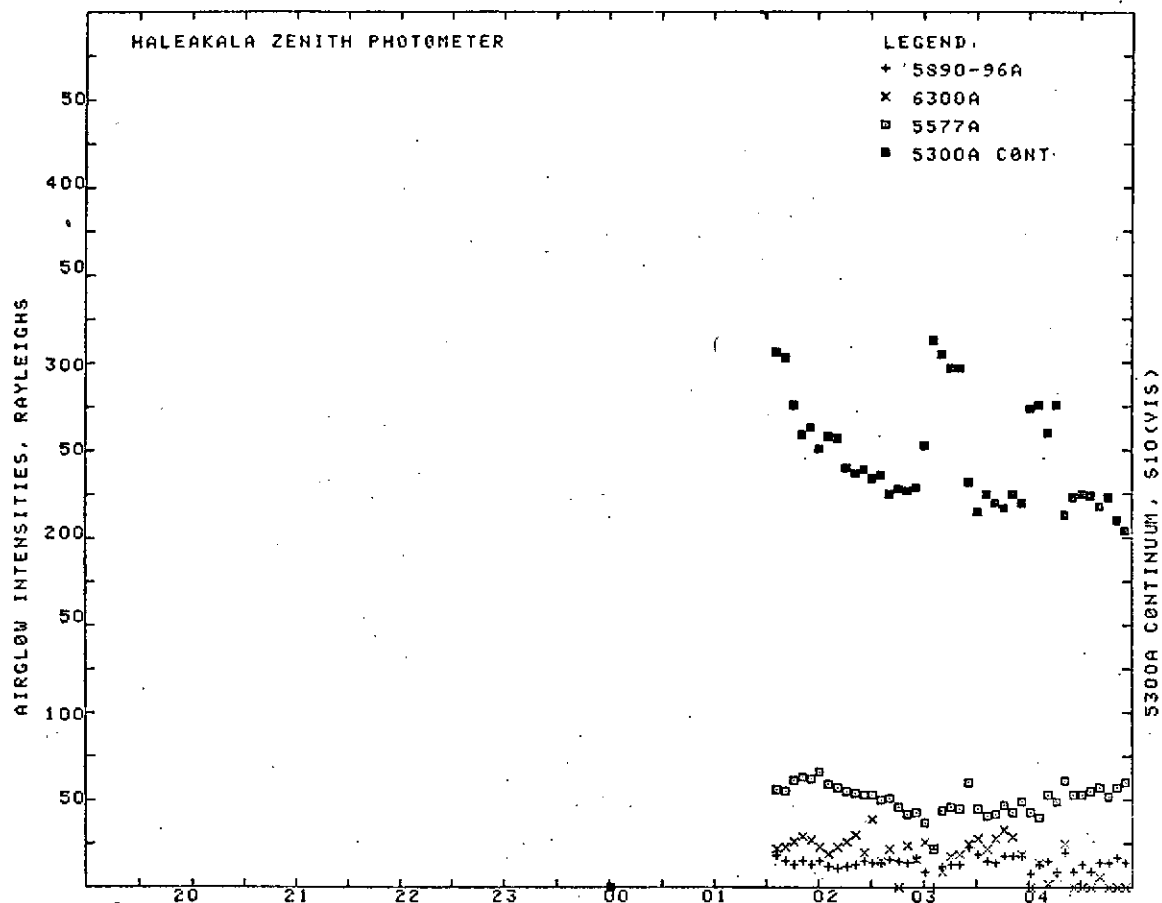




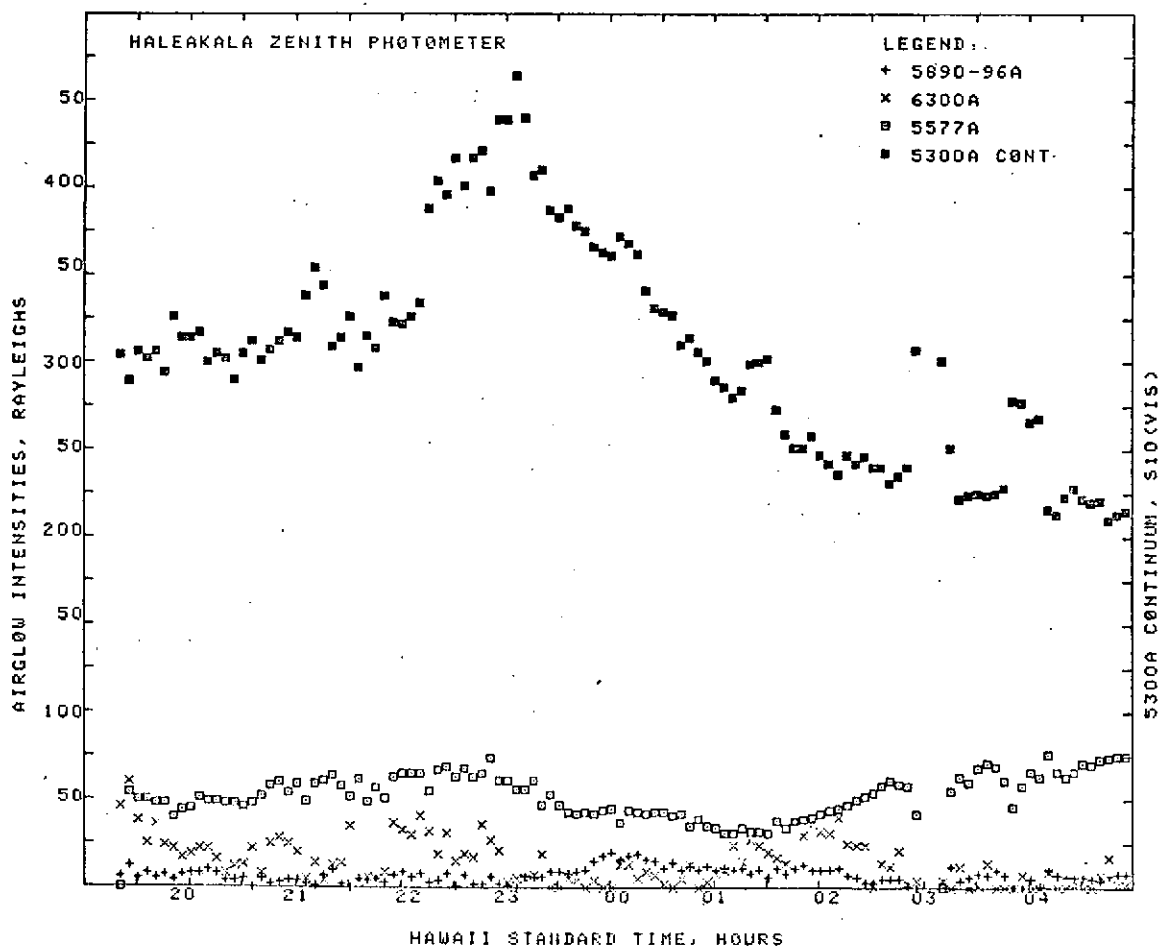


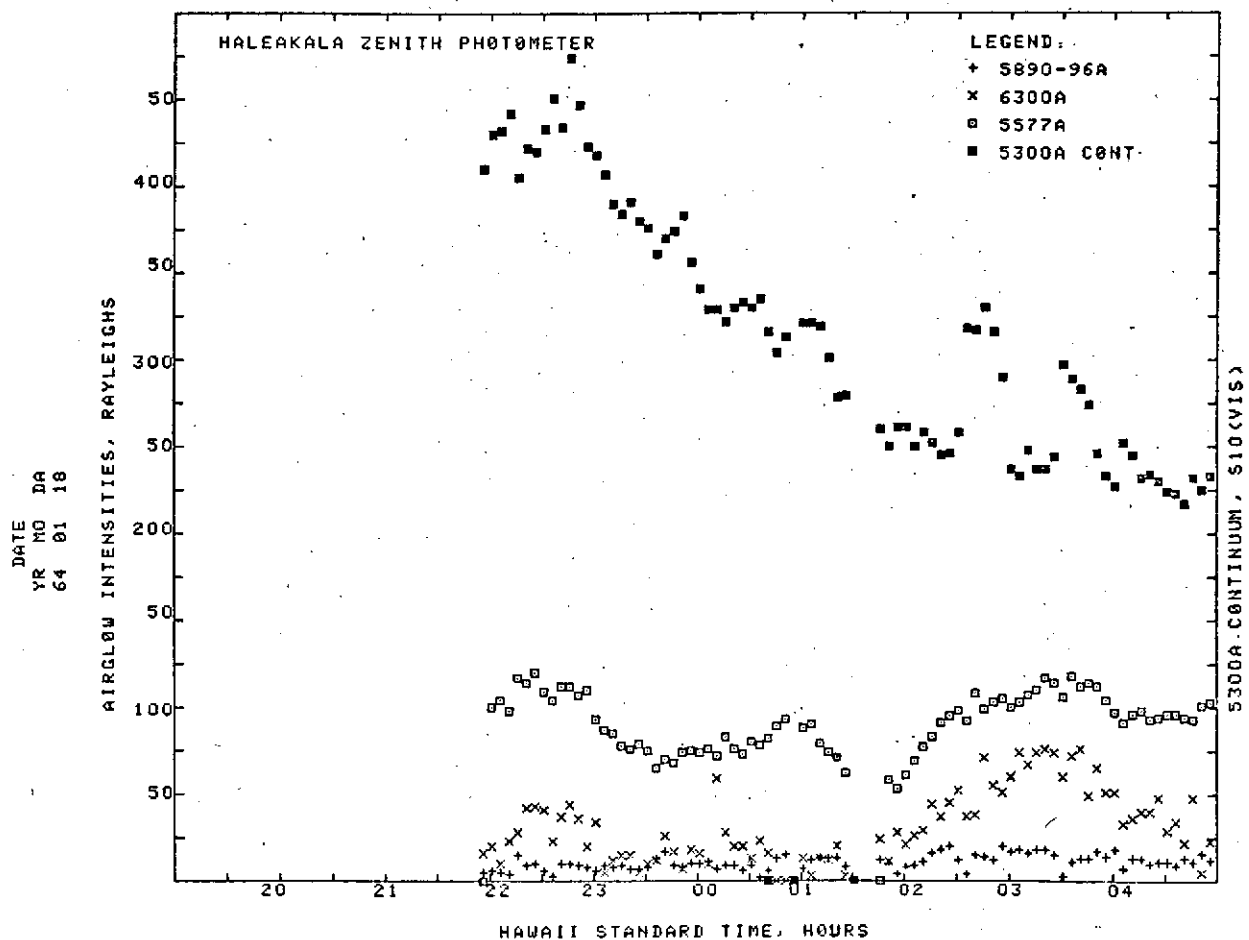
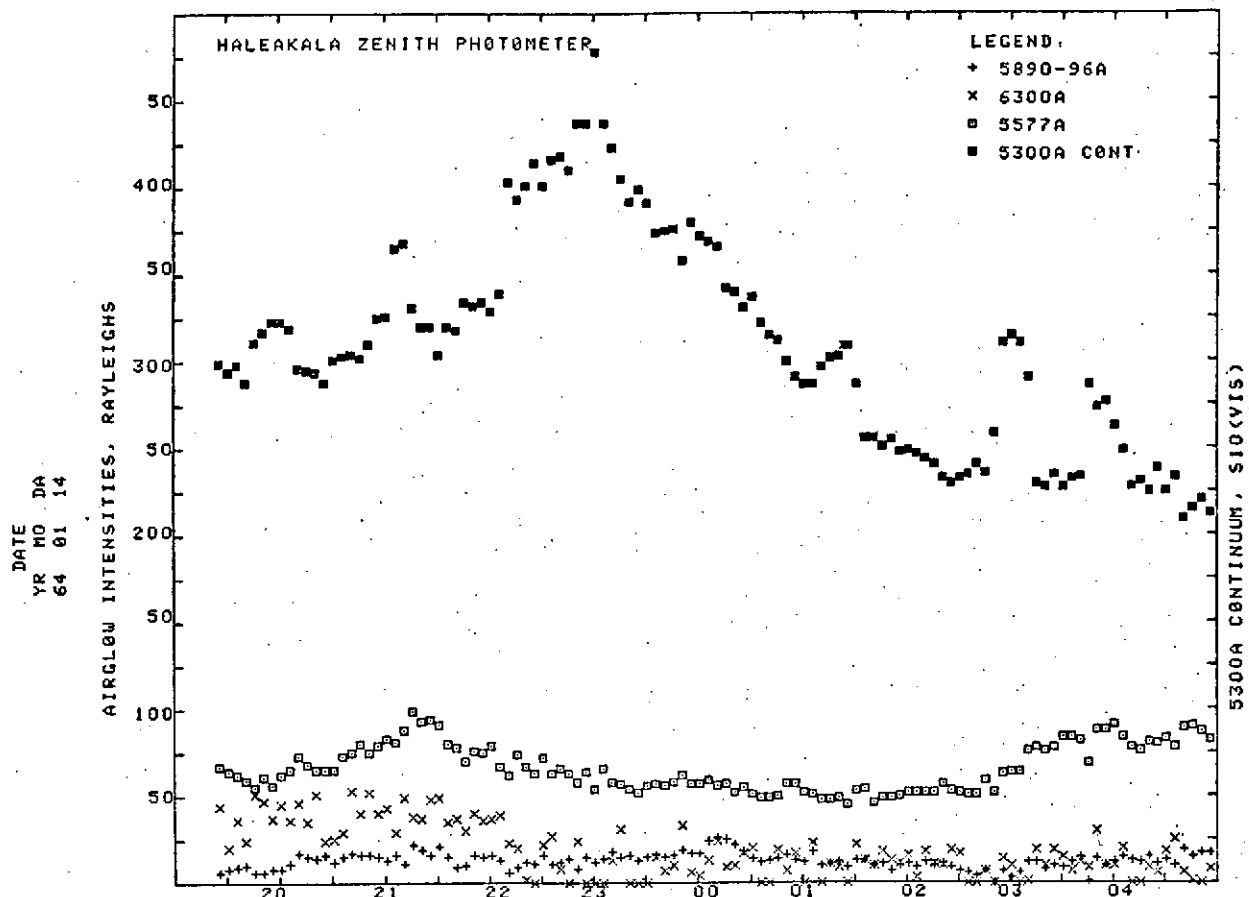


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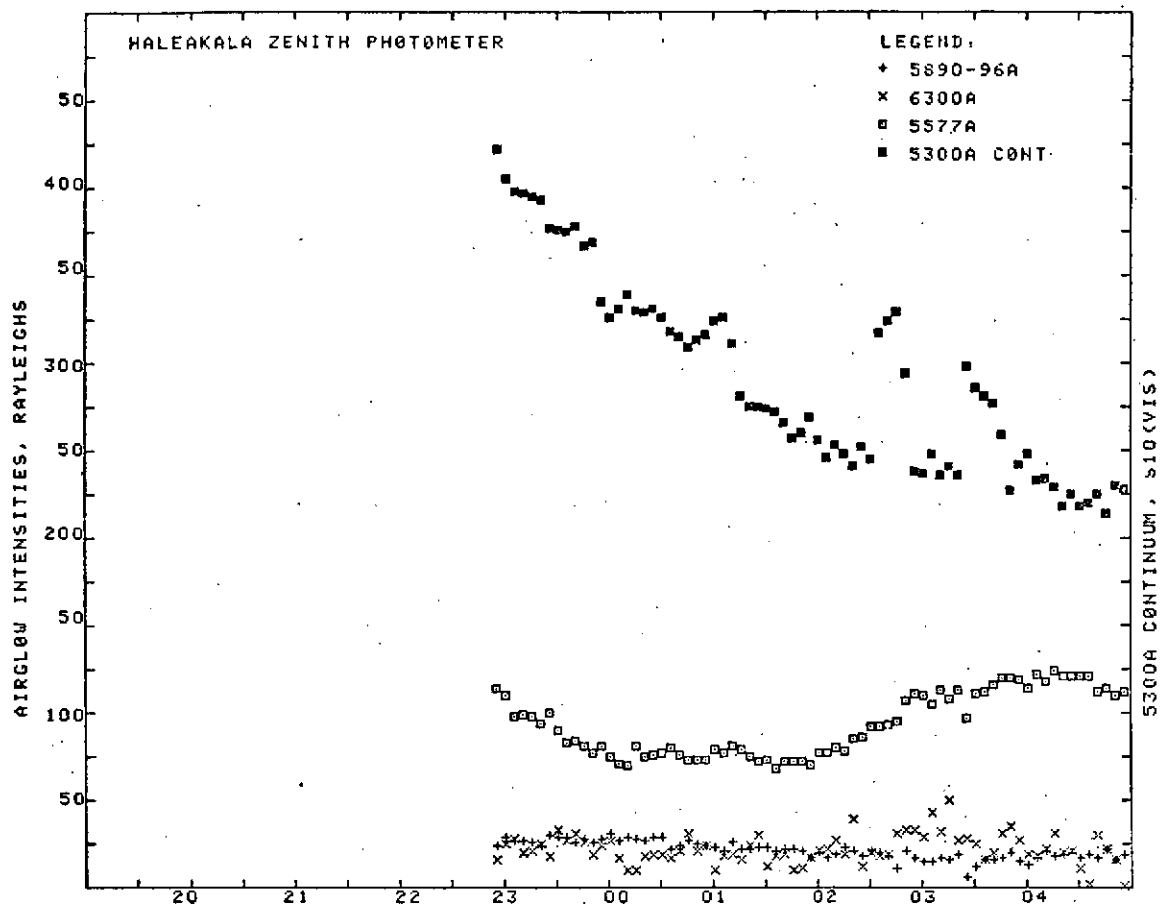


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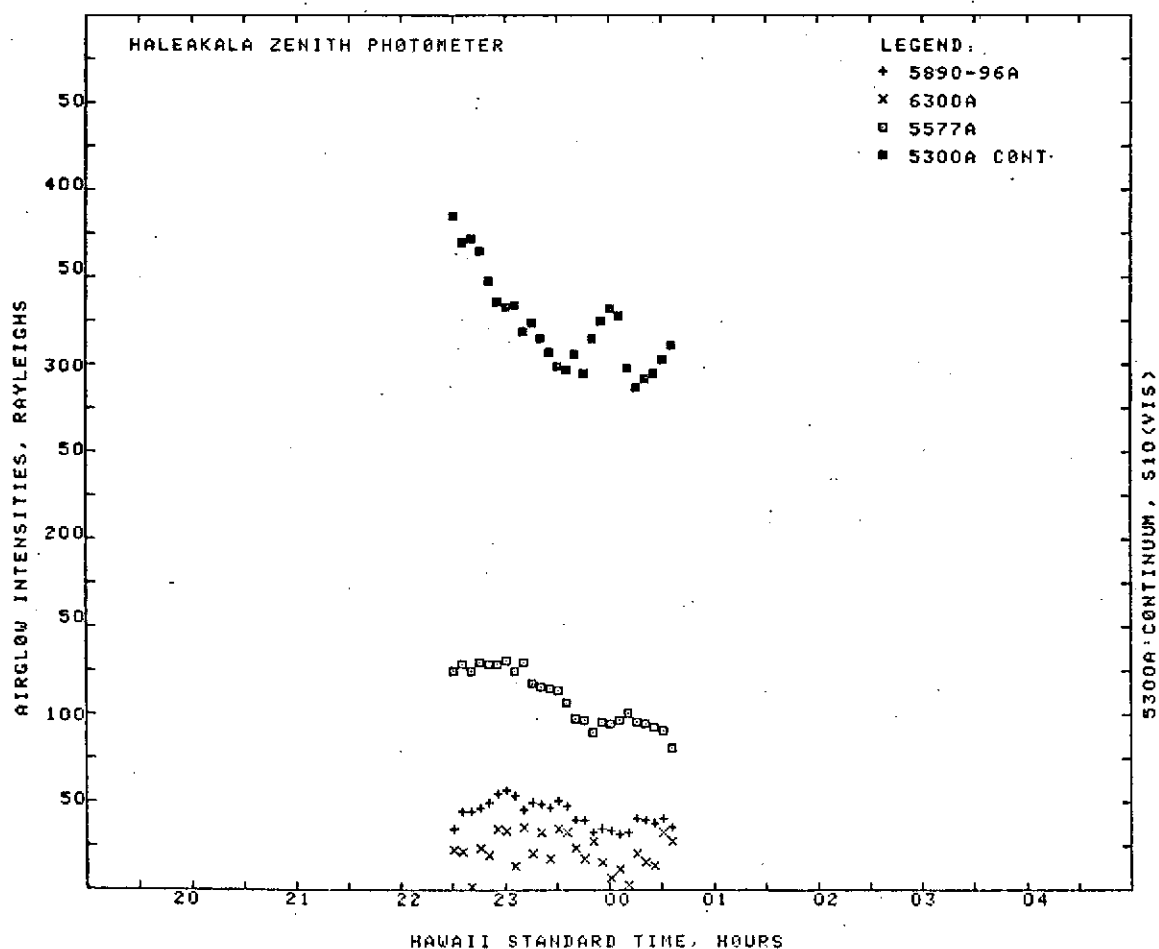


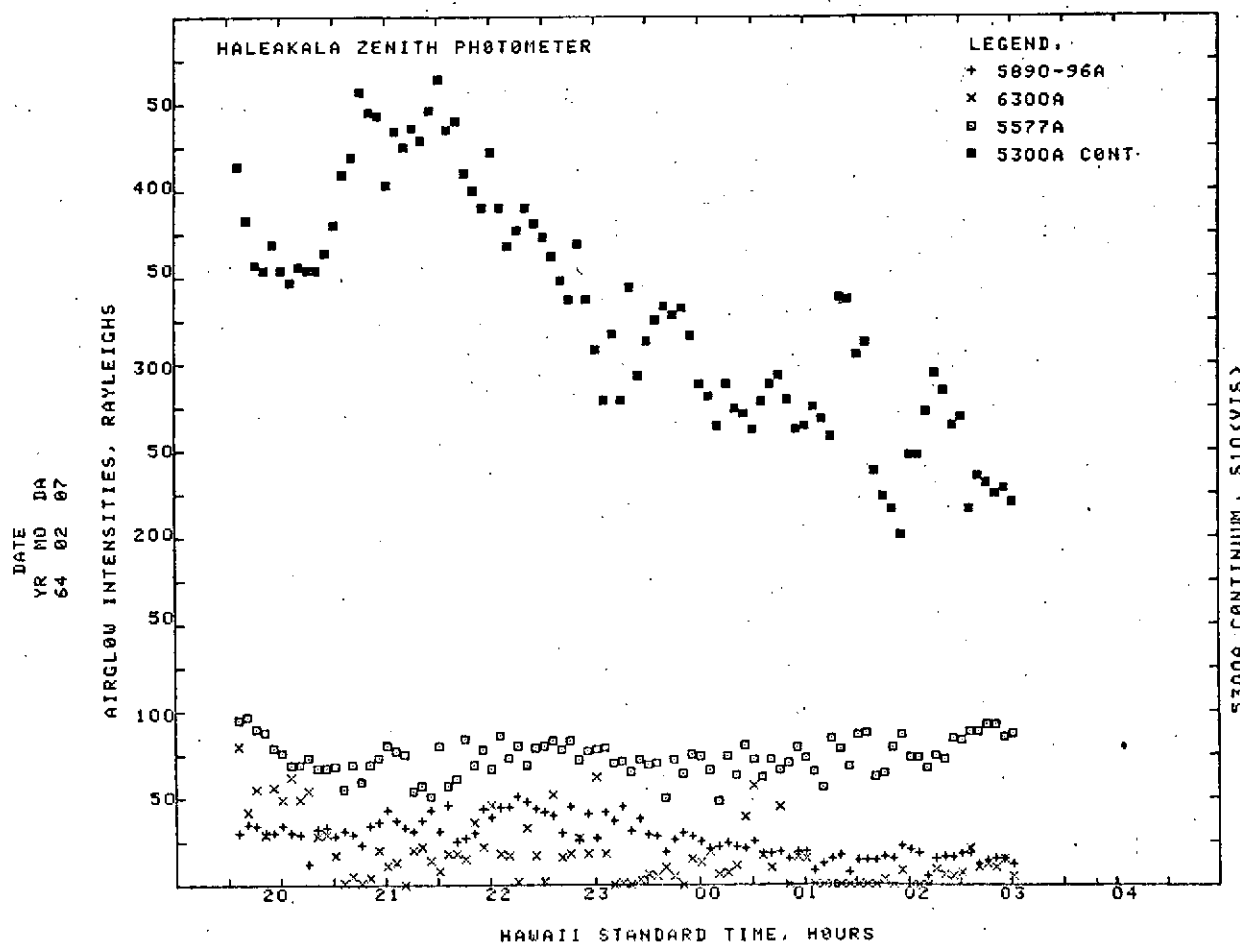
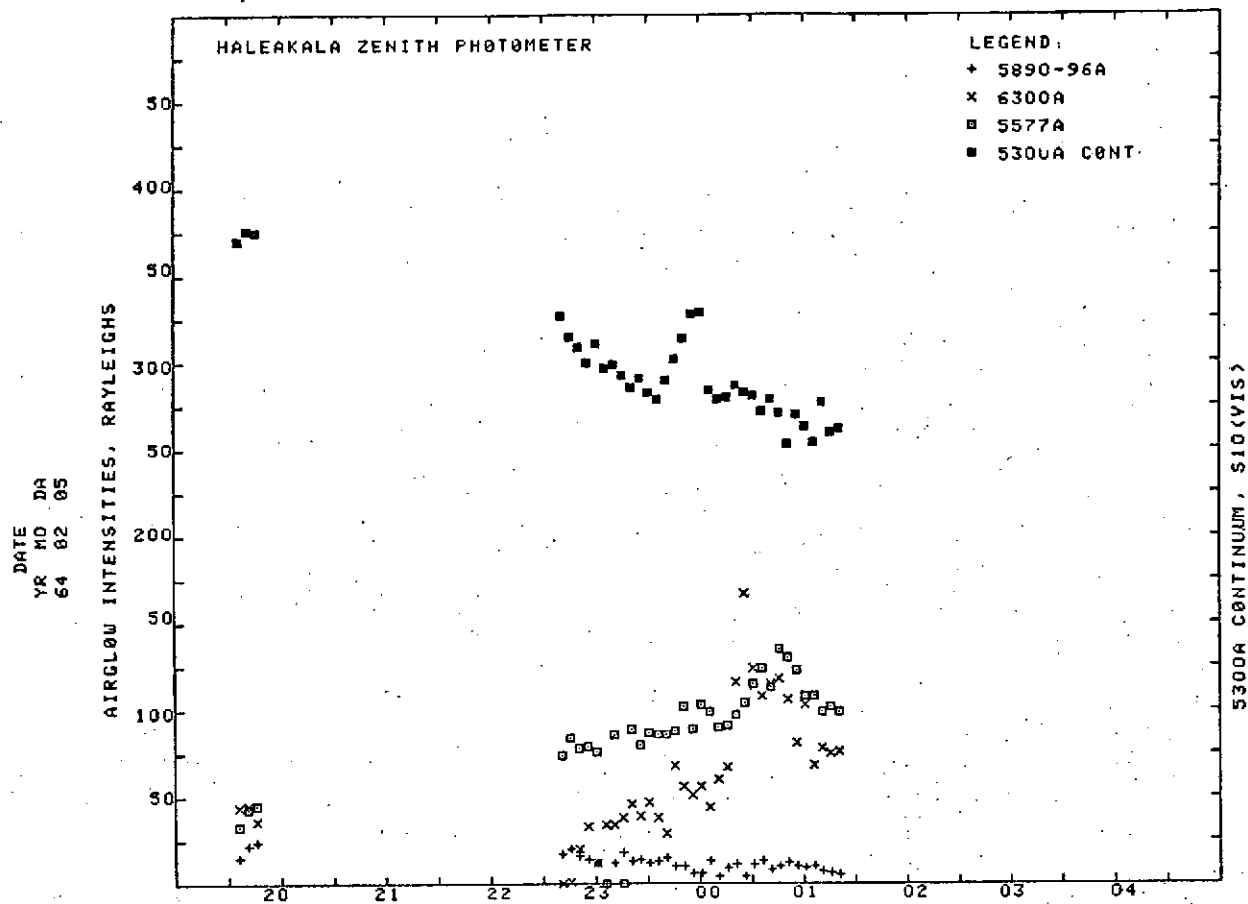


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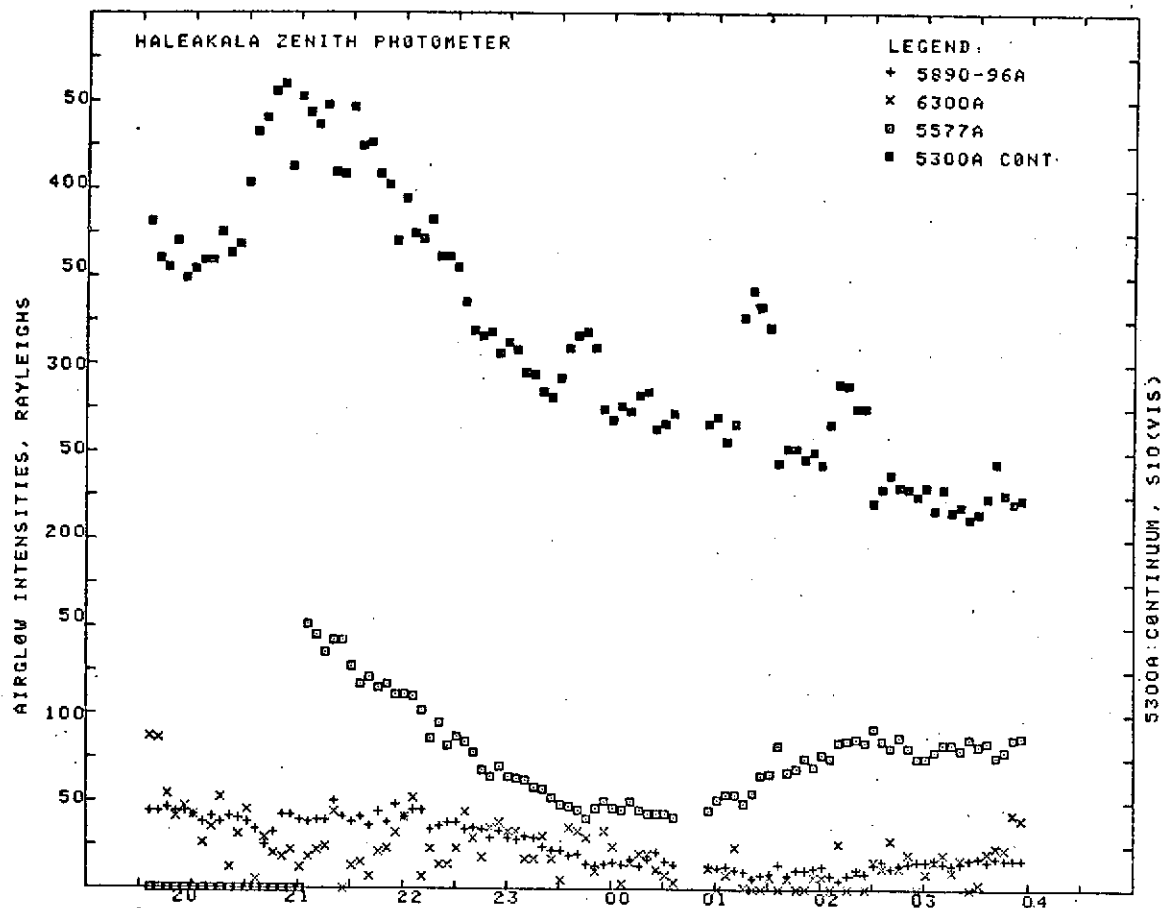


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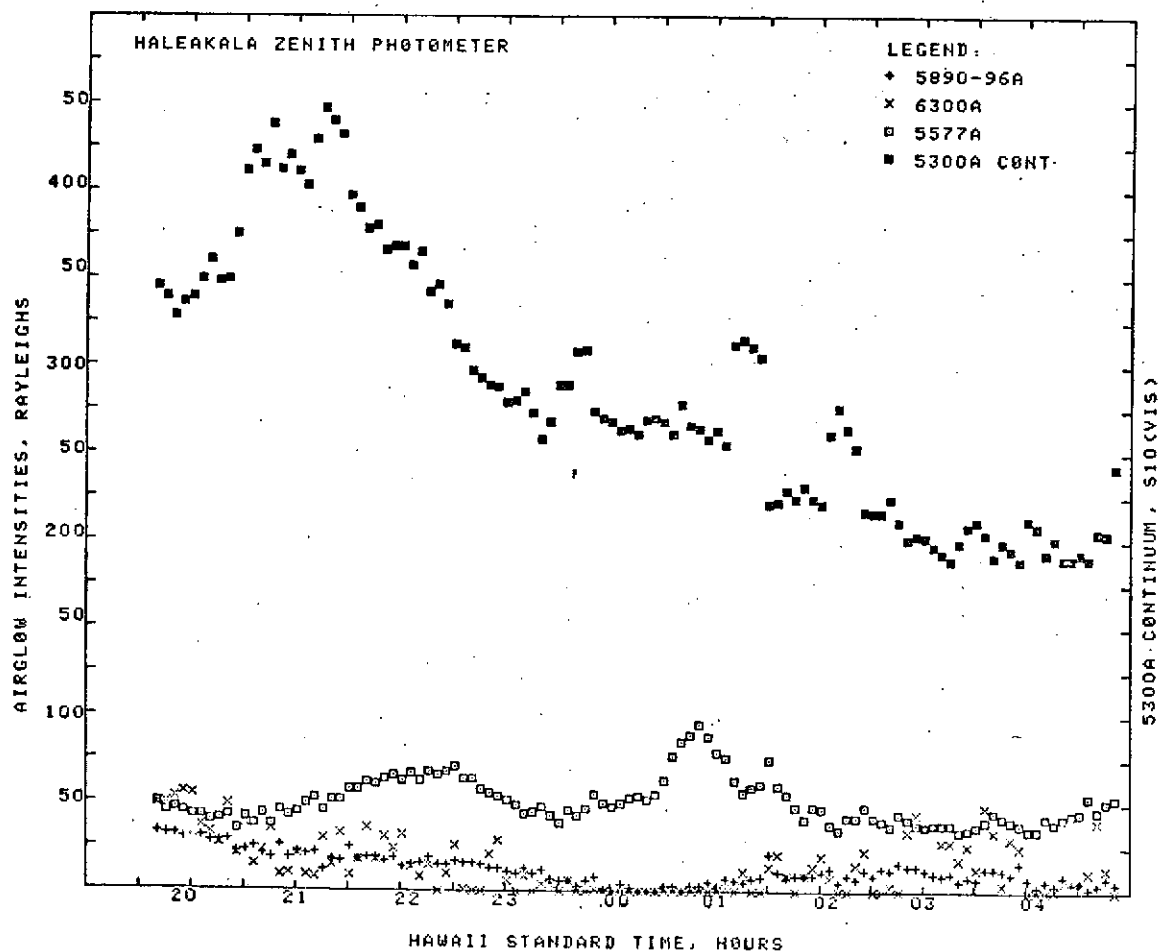




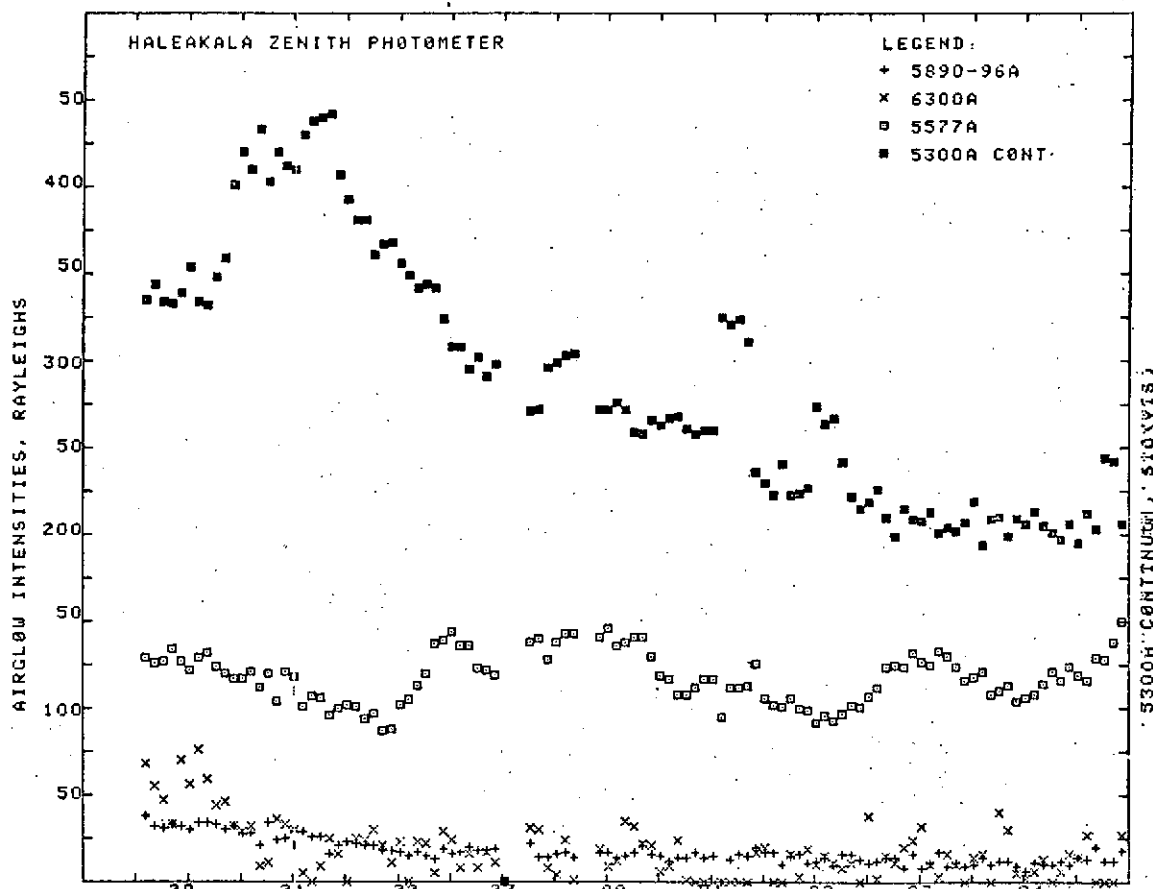
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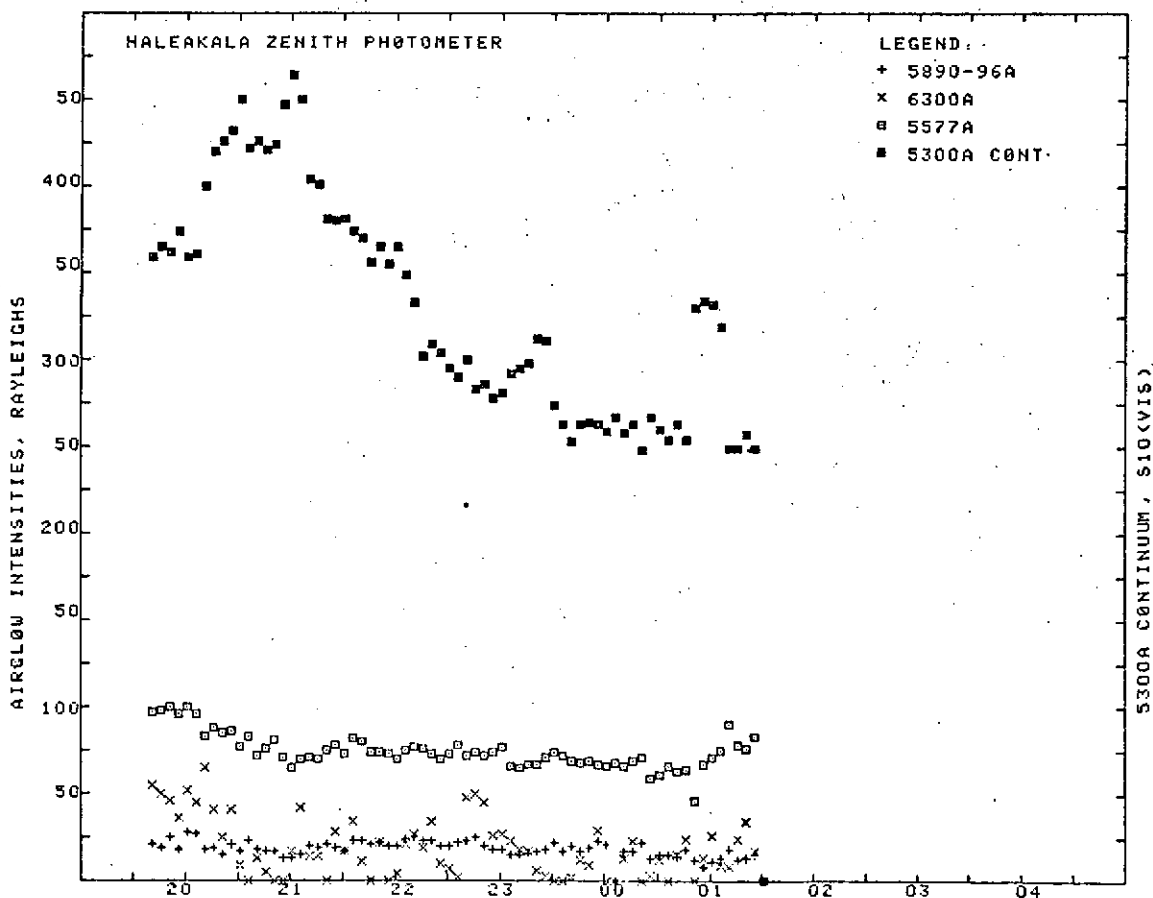
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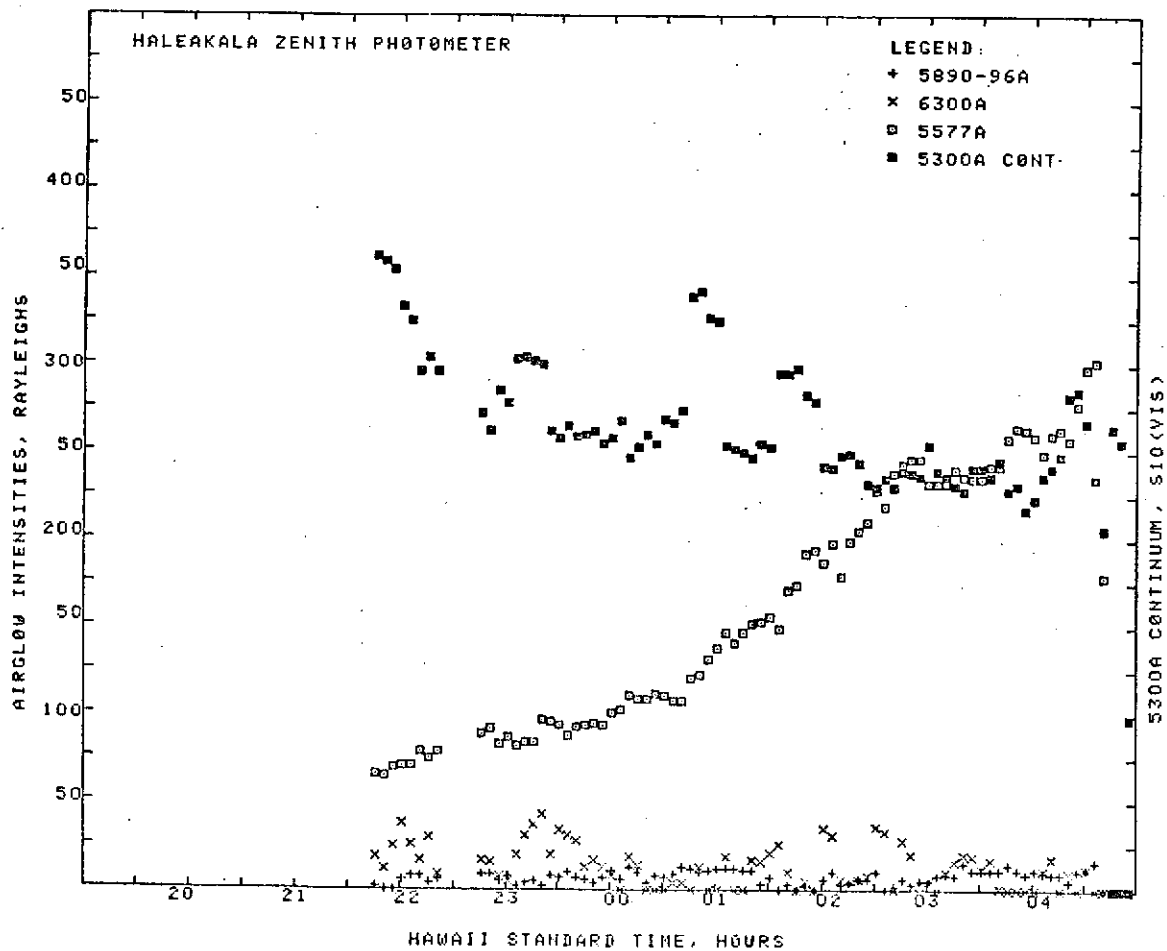
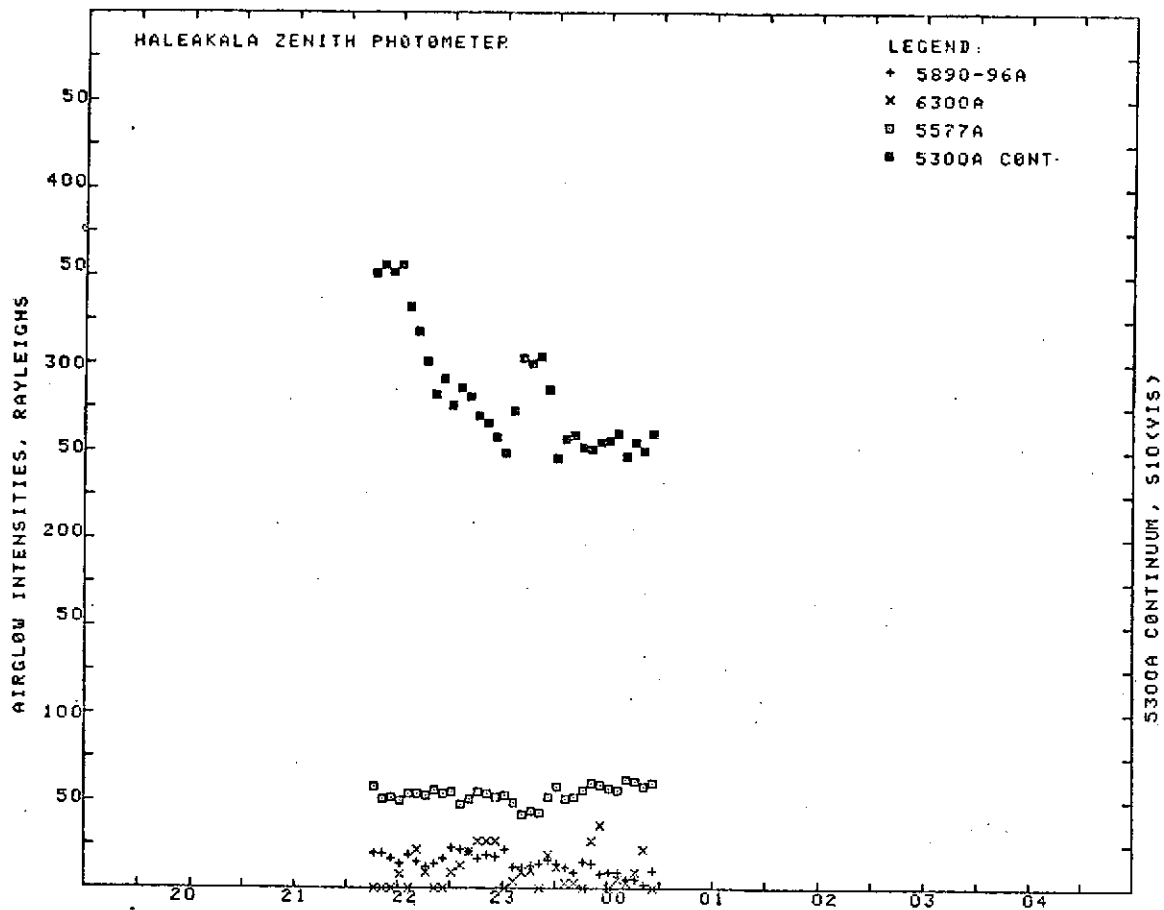


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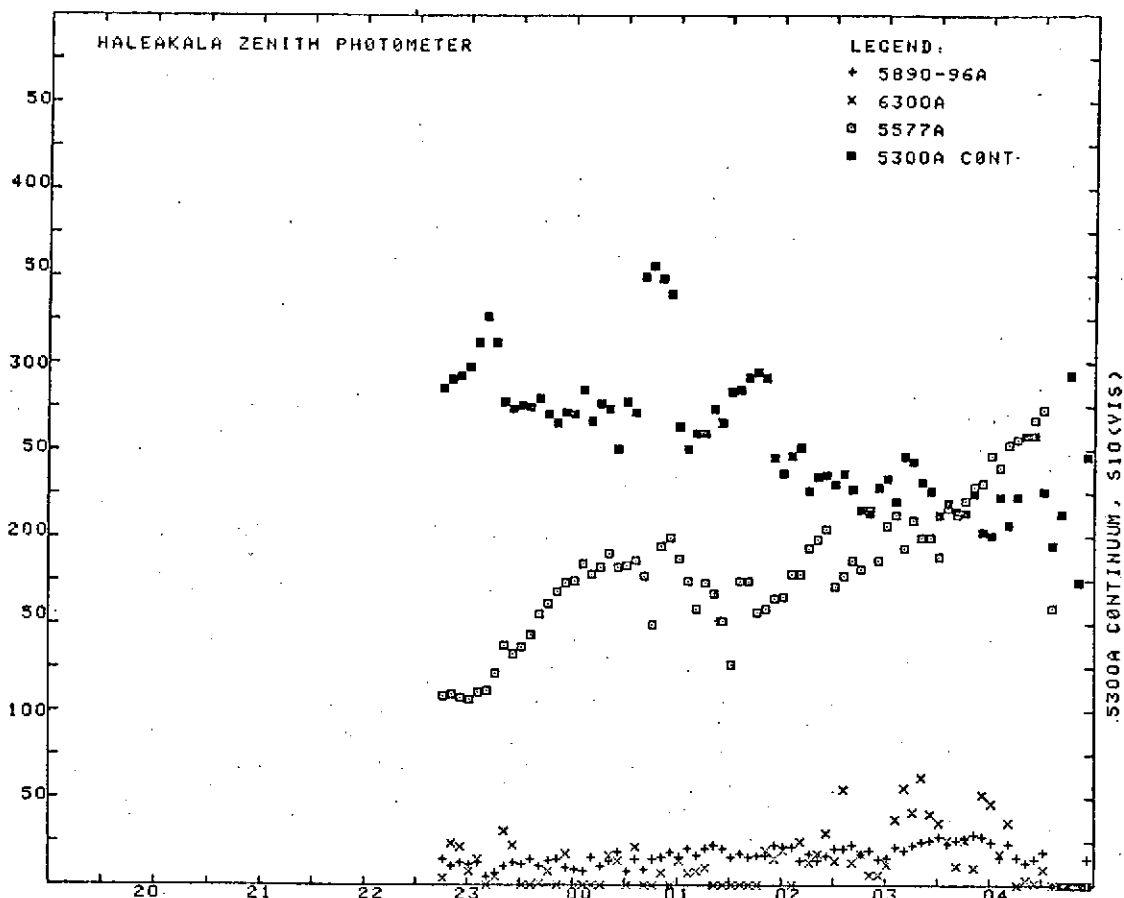
HAWAII STANDARD TIME, HOURS





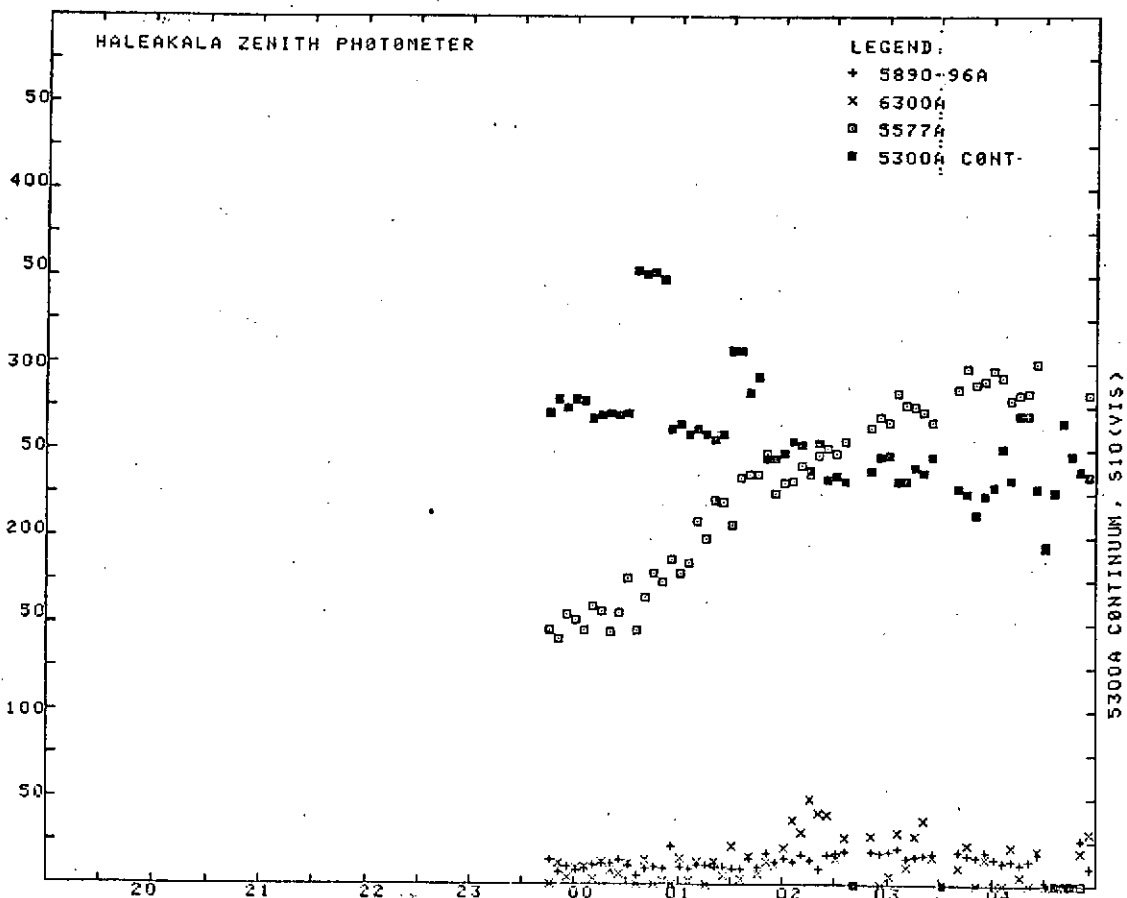
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AIRGLOW INTENSITIES, RAYLEIGHS



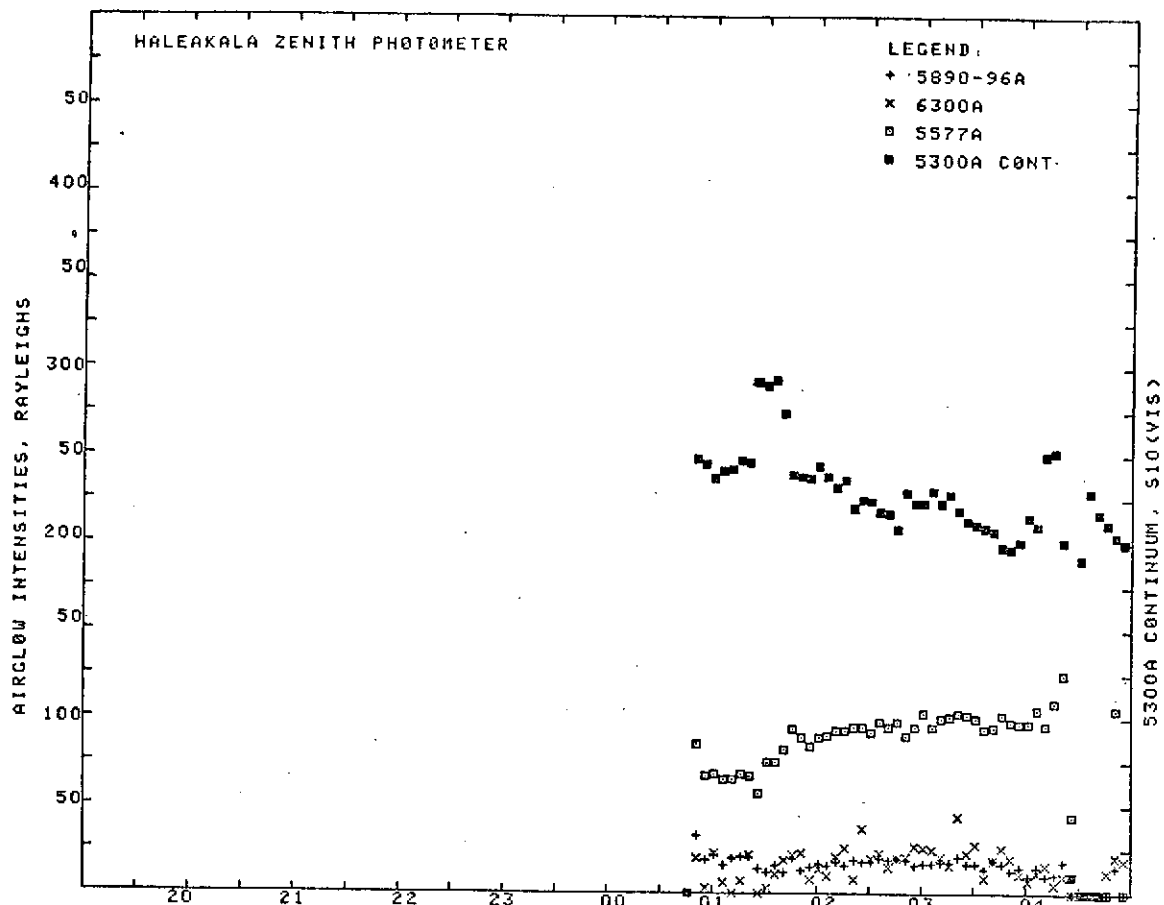
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AIRGLOW INTENSITIES, RAYLEIGHS

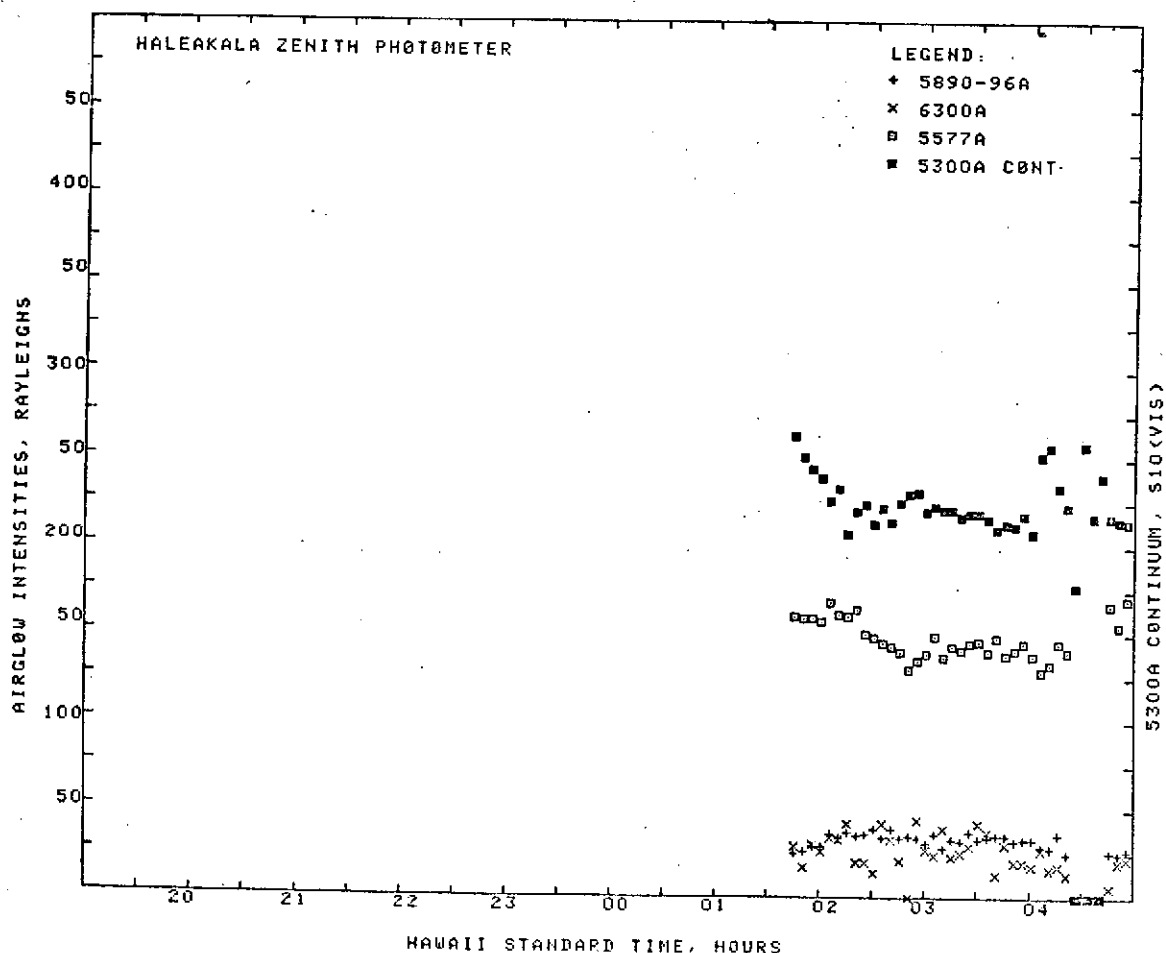


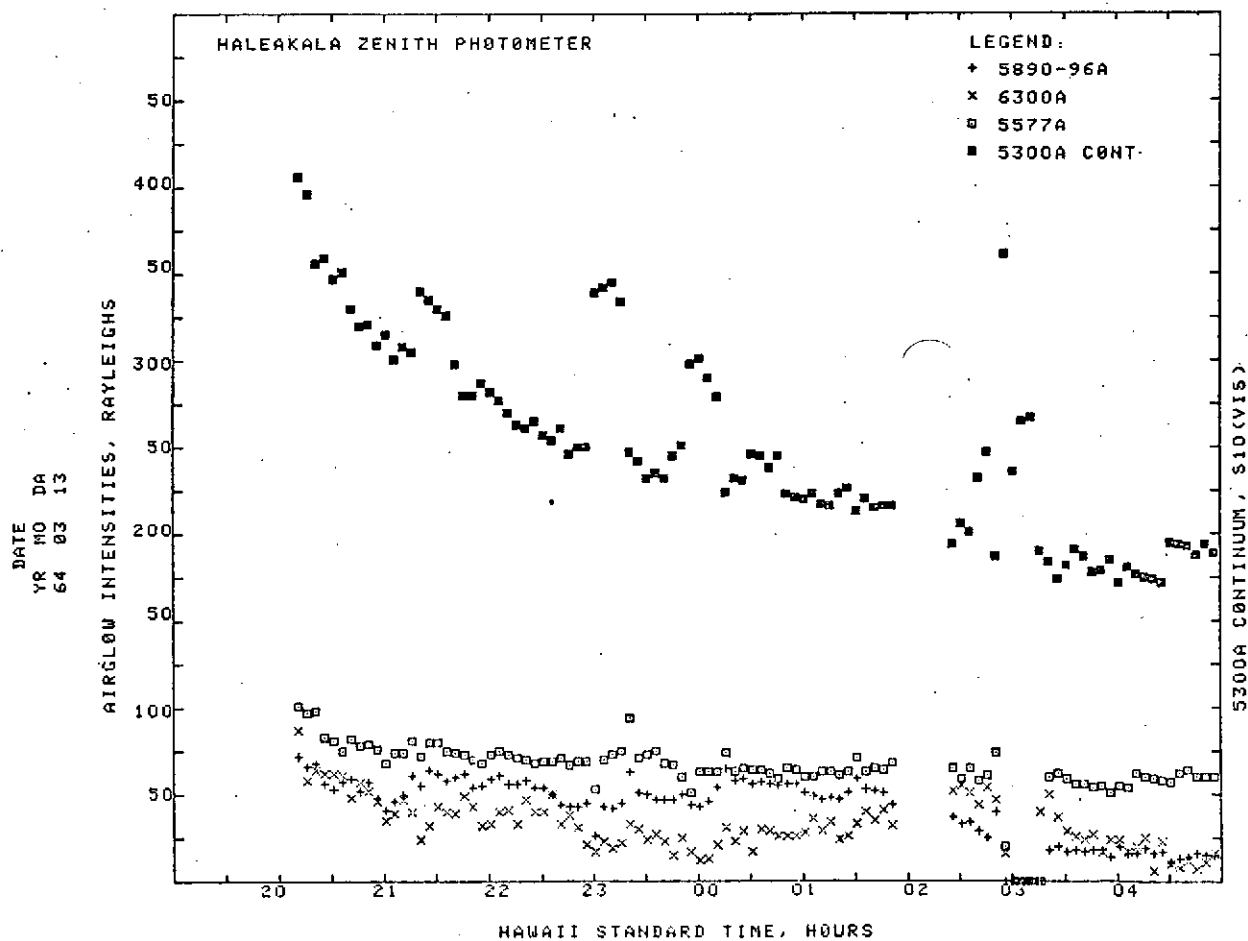
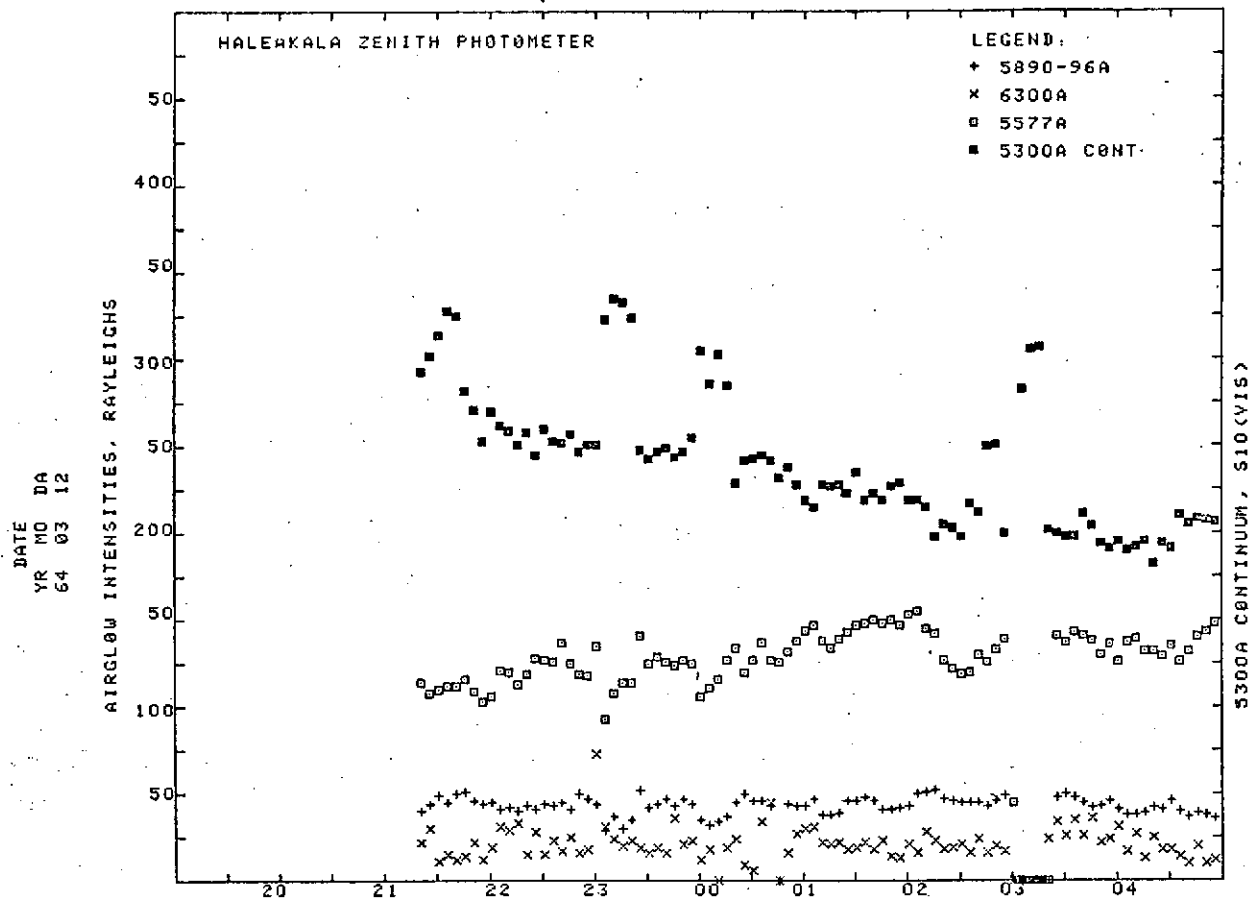
HAWAII STANDARD TIME, HOURS

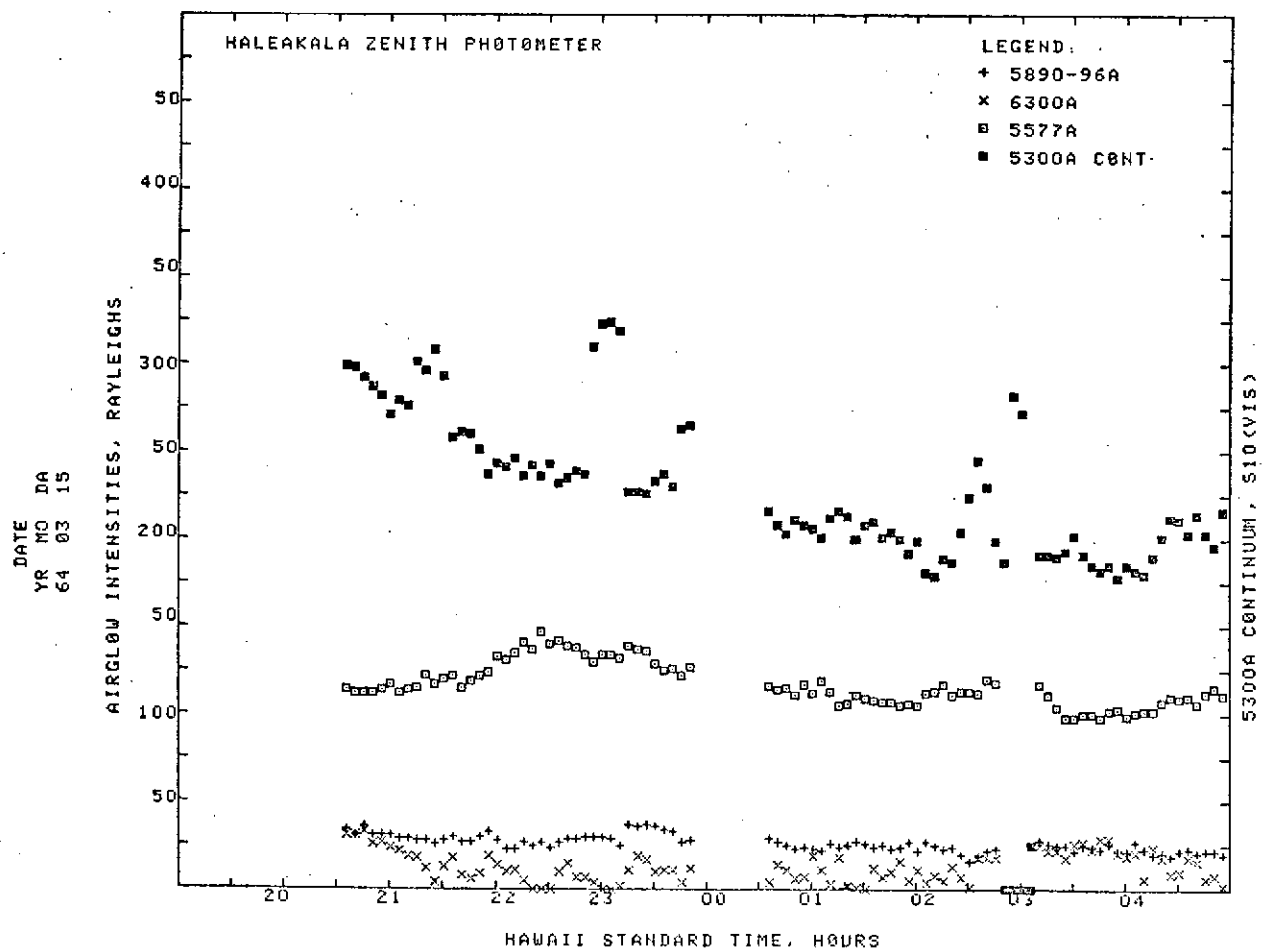
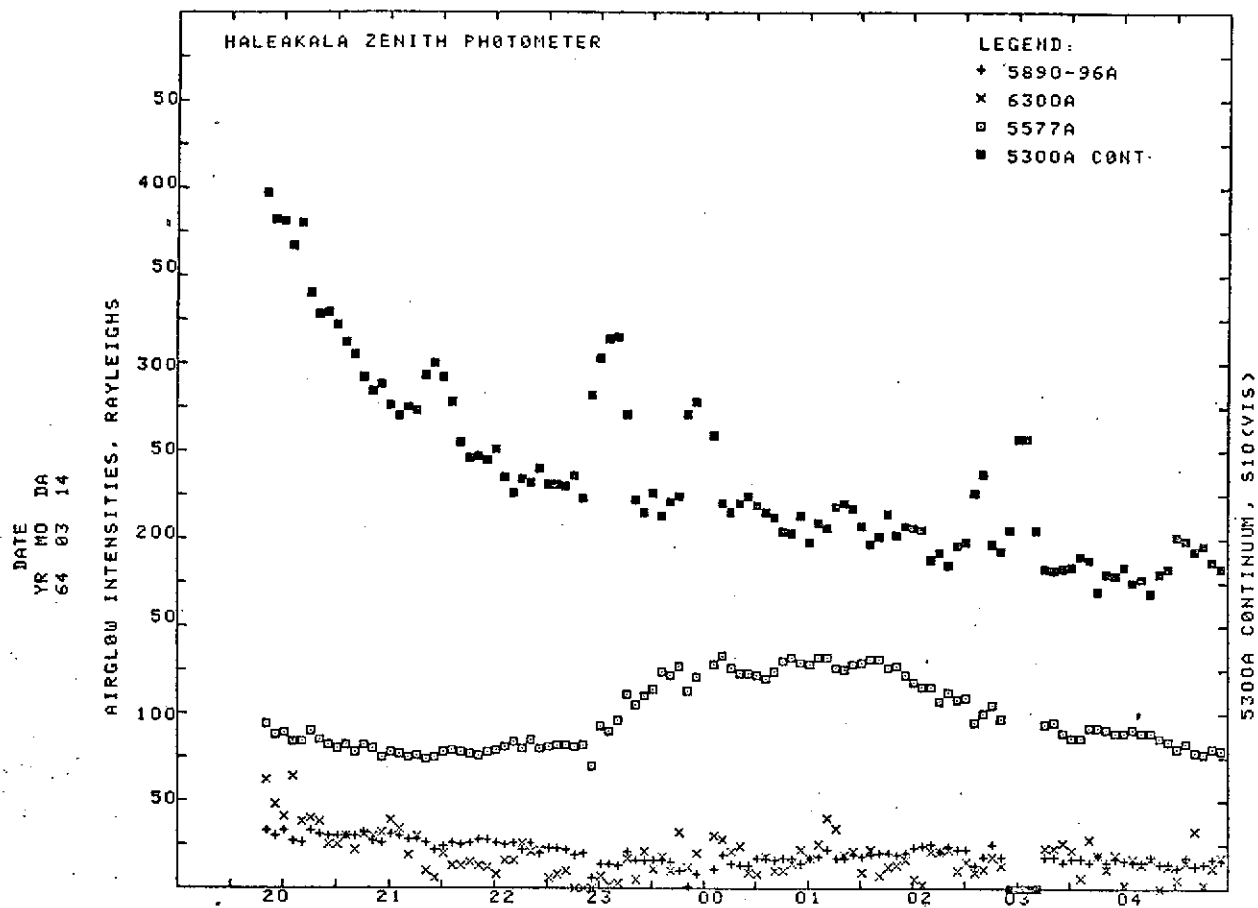
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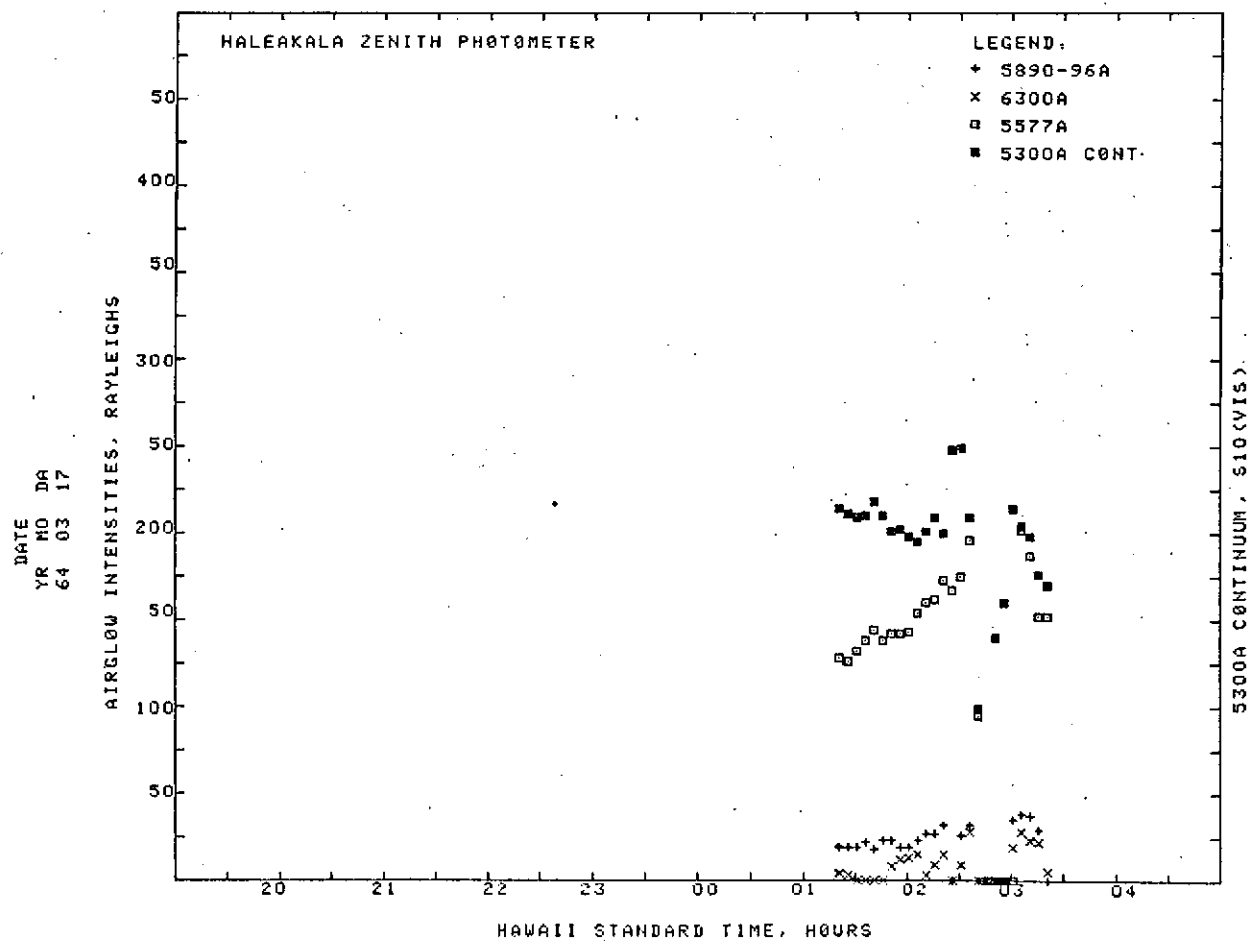
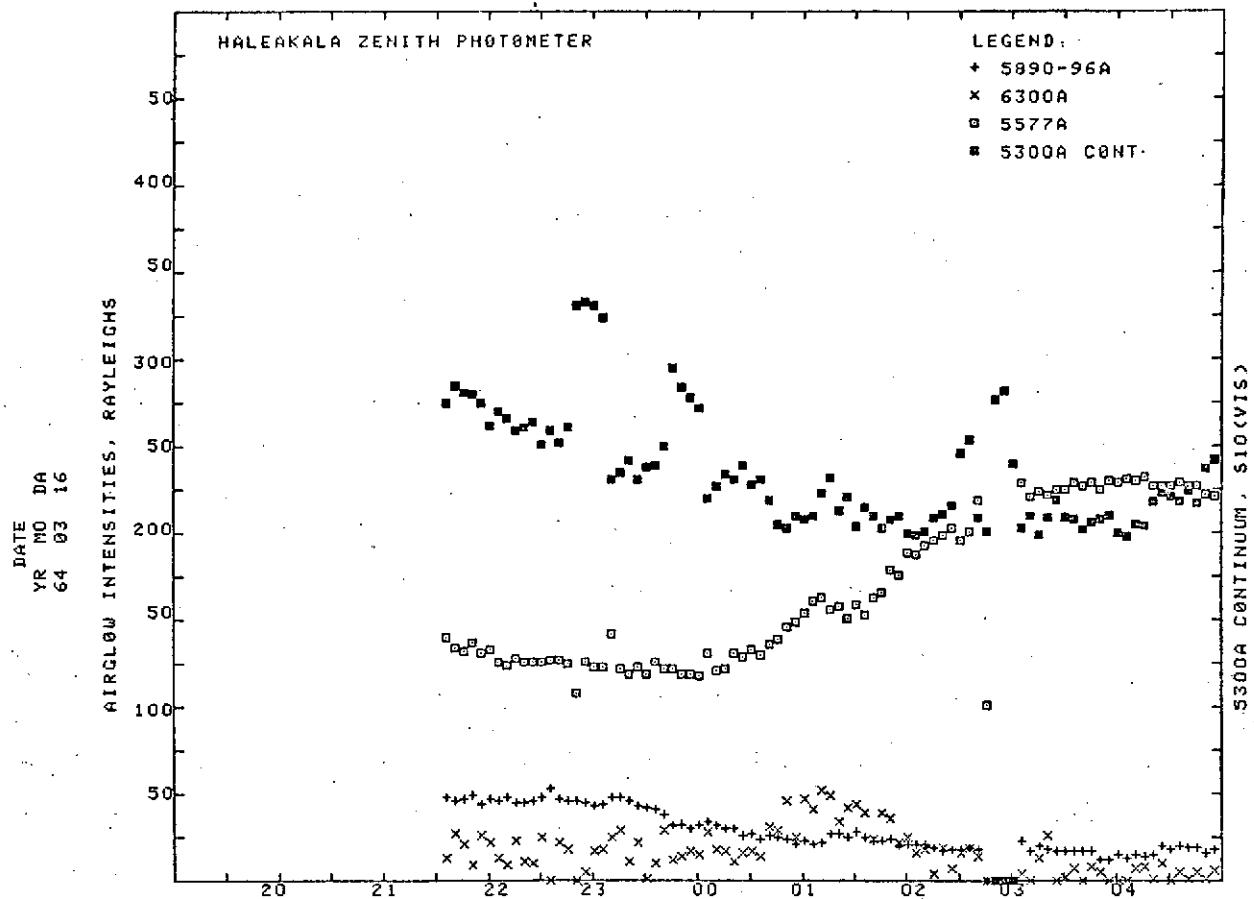


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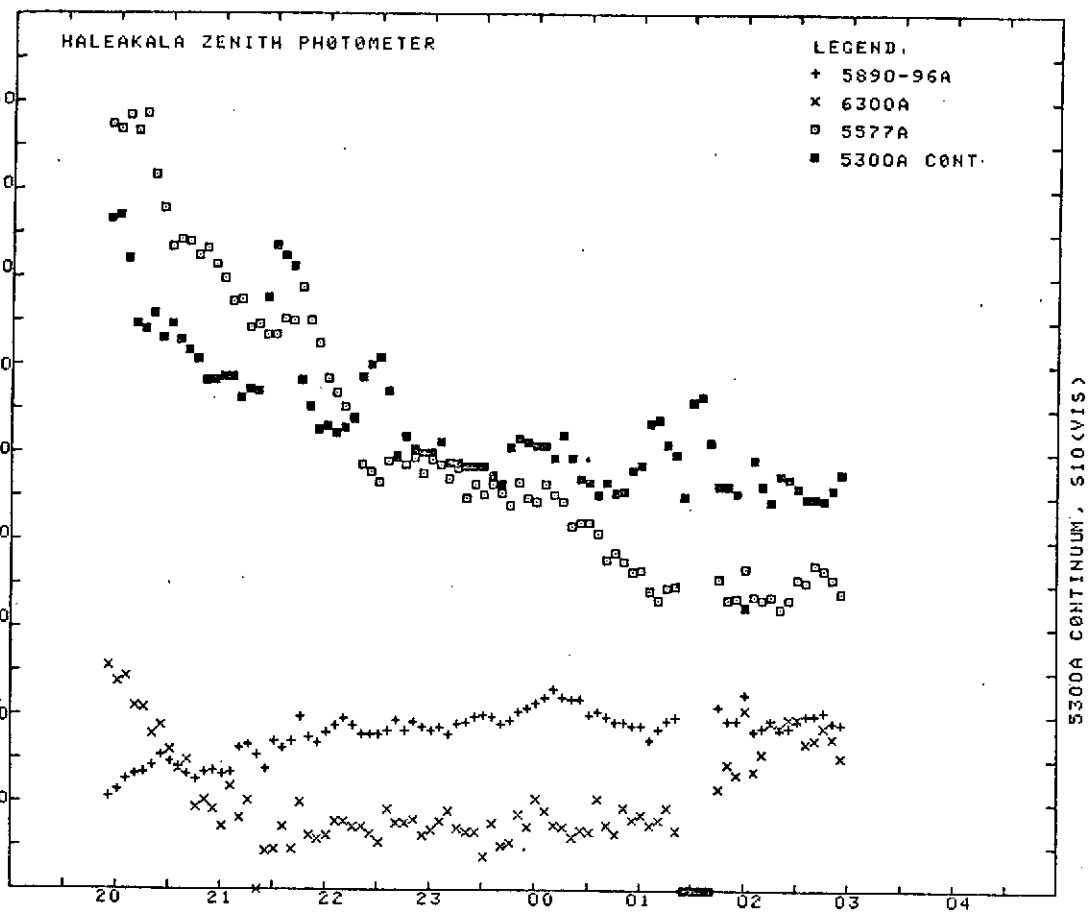






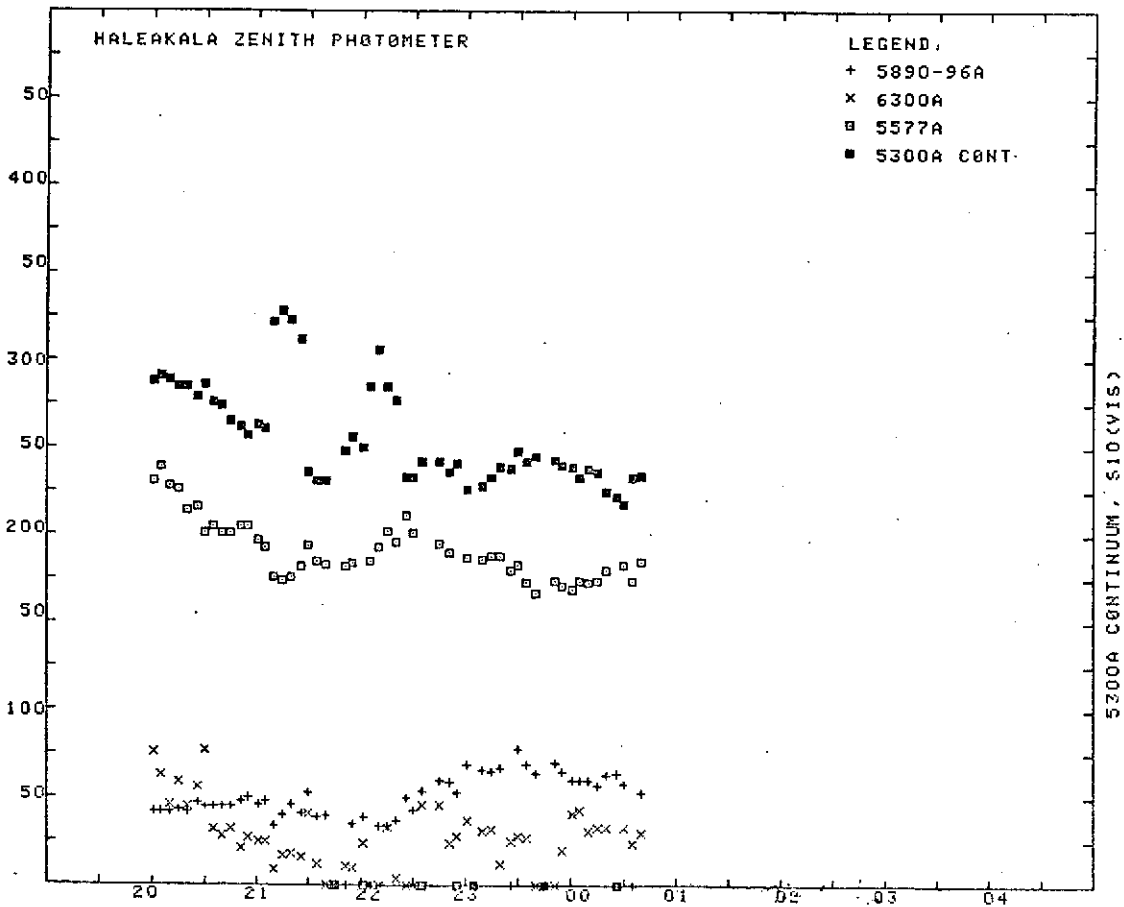
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AIRGLOW INTENSITIES, RAYLEIGHS

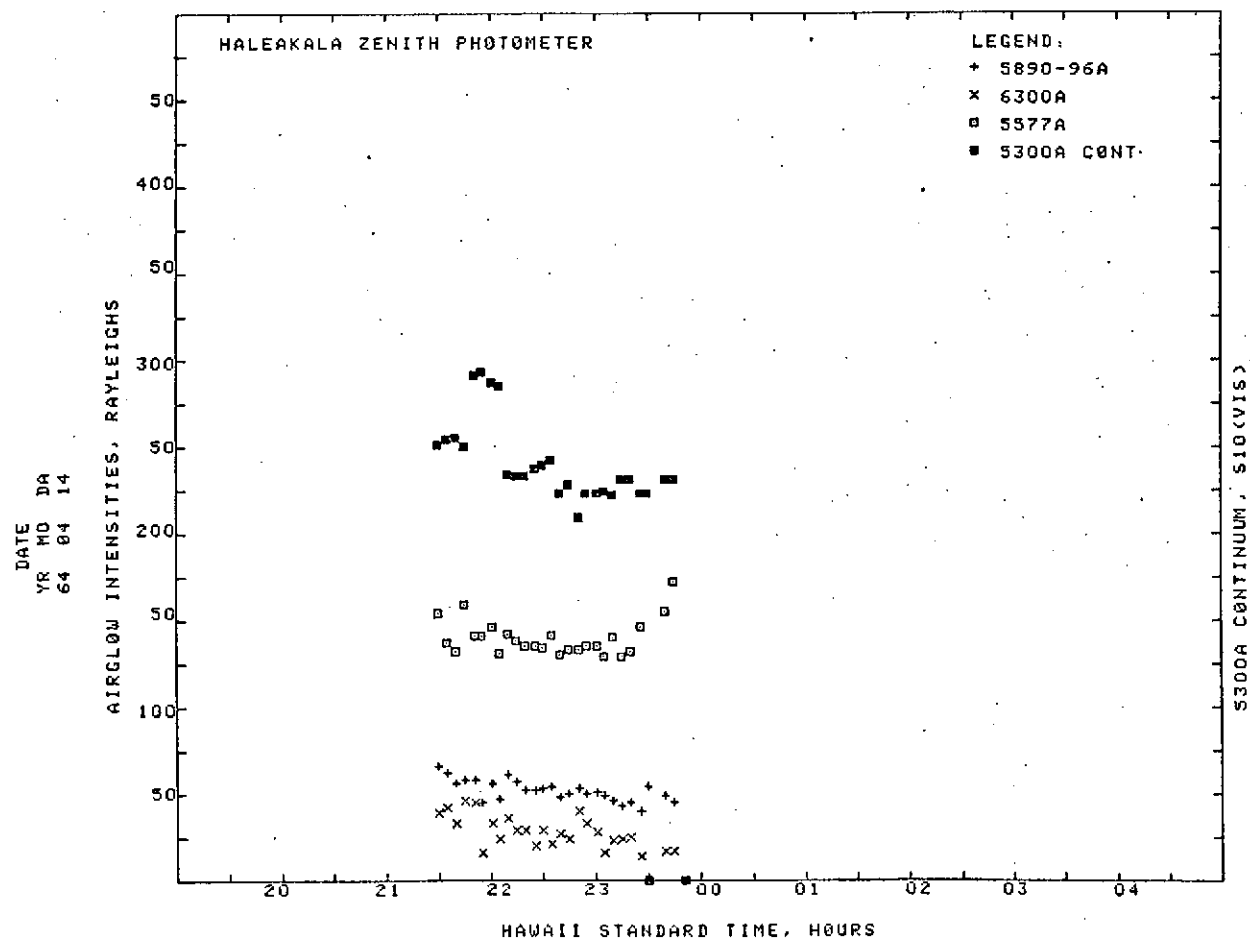
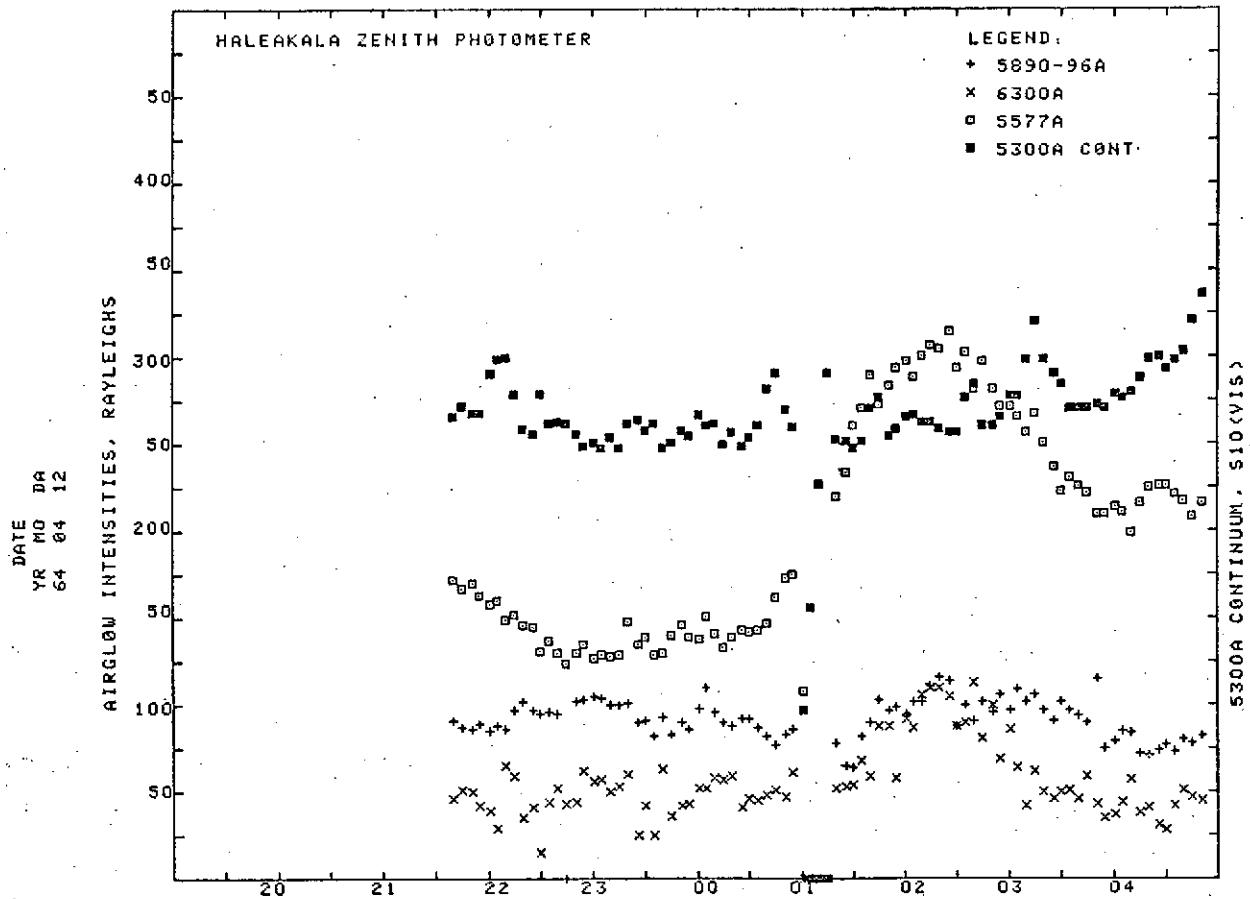


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AIRGLOW INTENSITIES, RAYLEIGHS

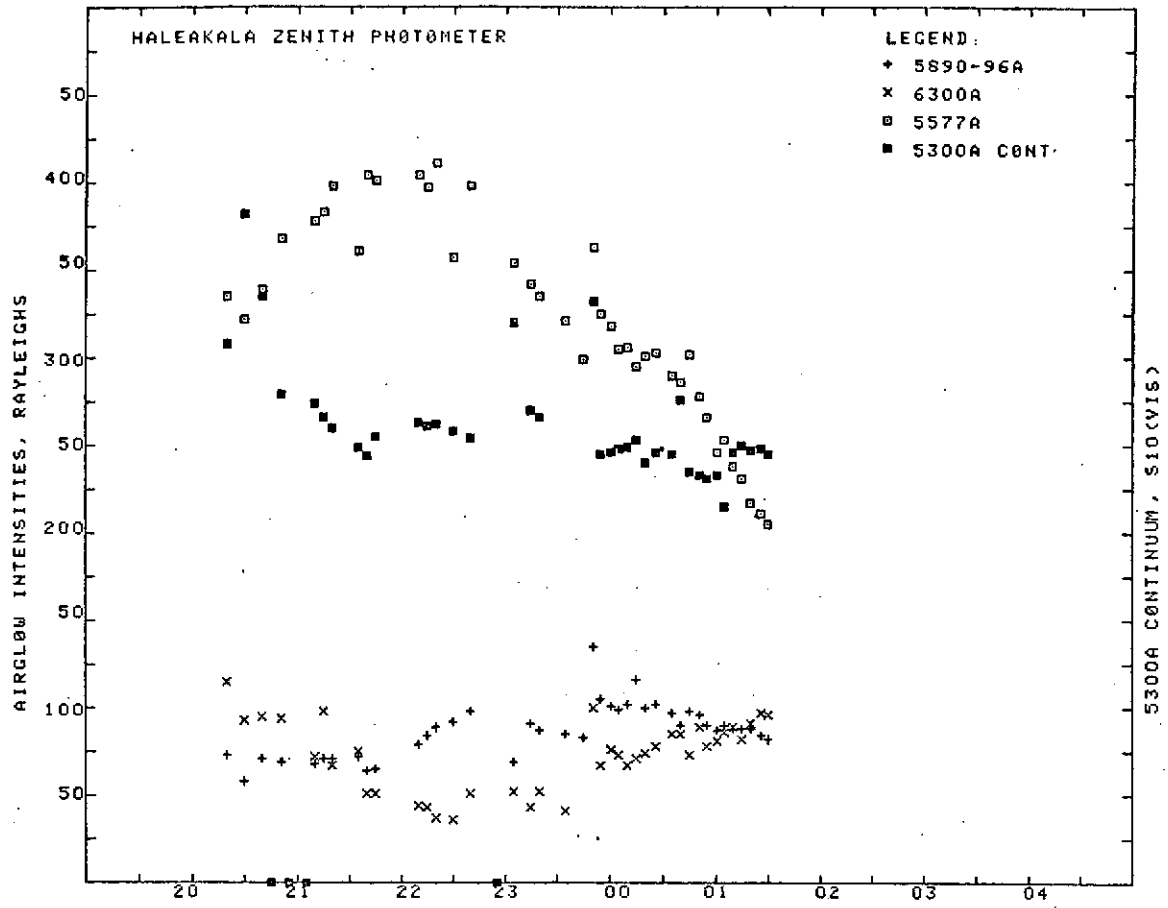


HAWAII STANDARD TIME, HOURS

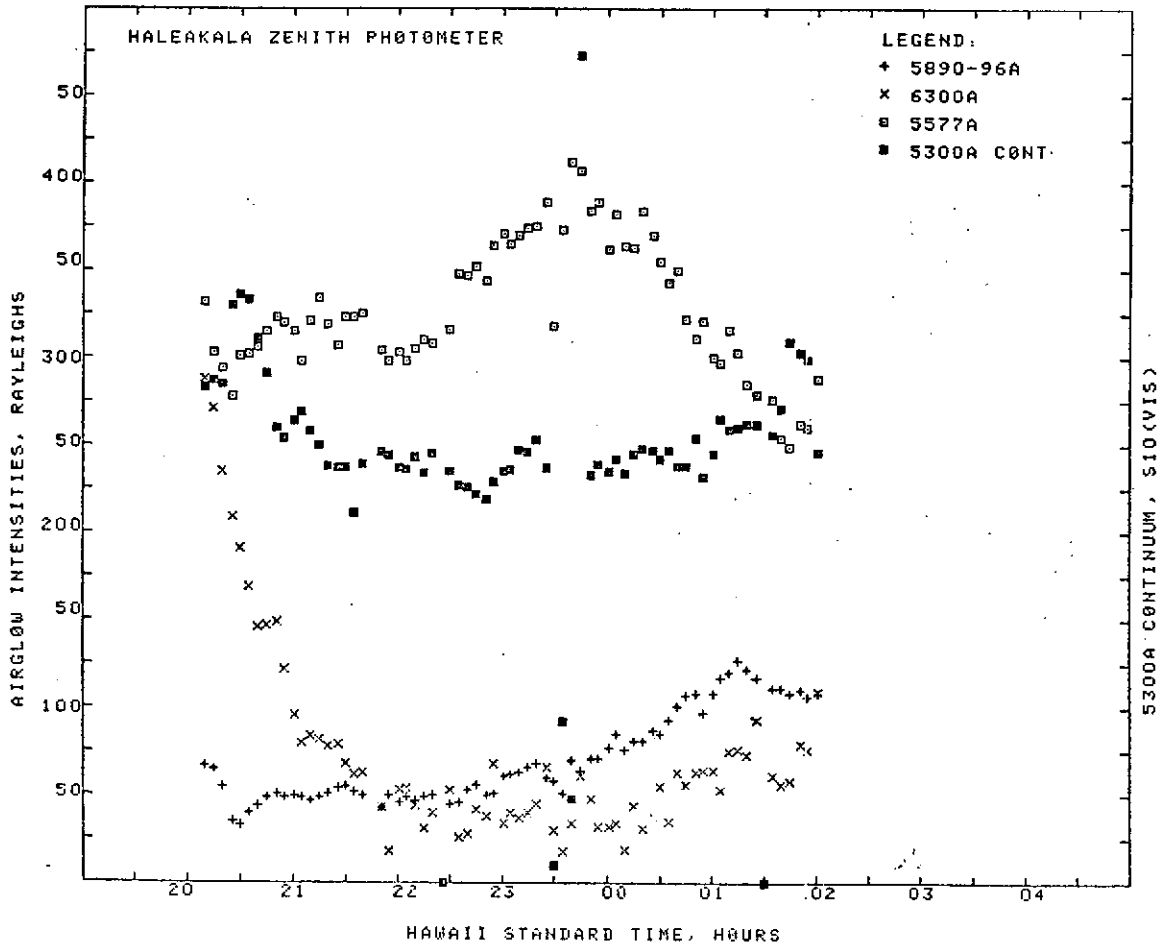


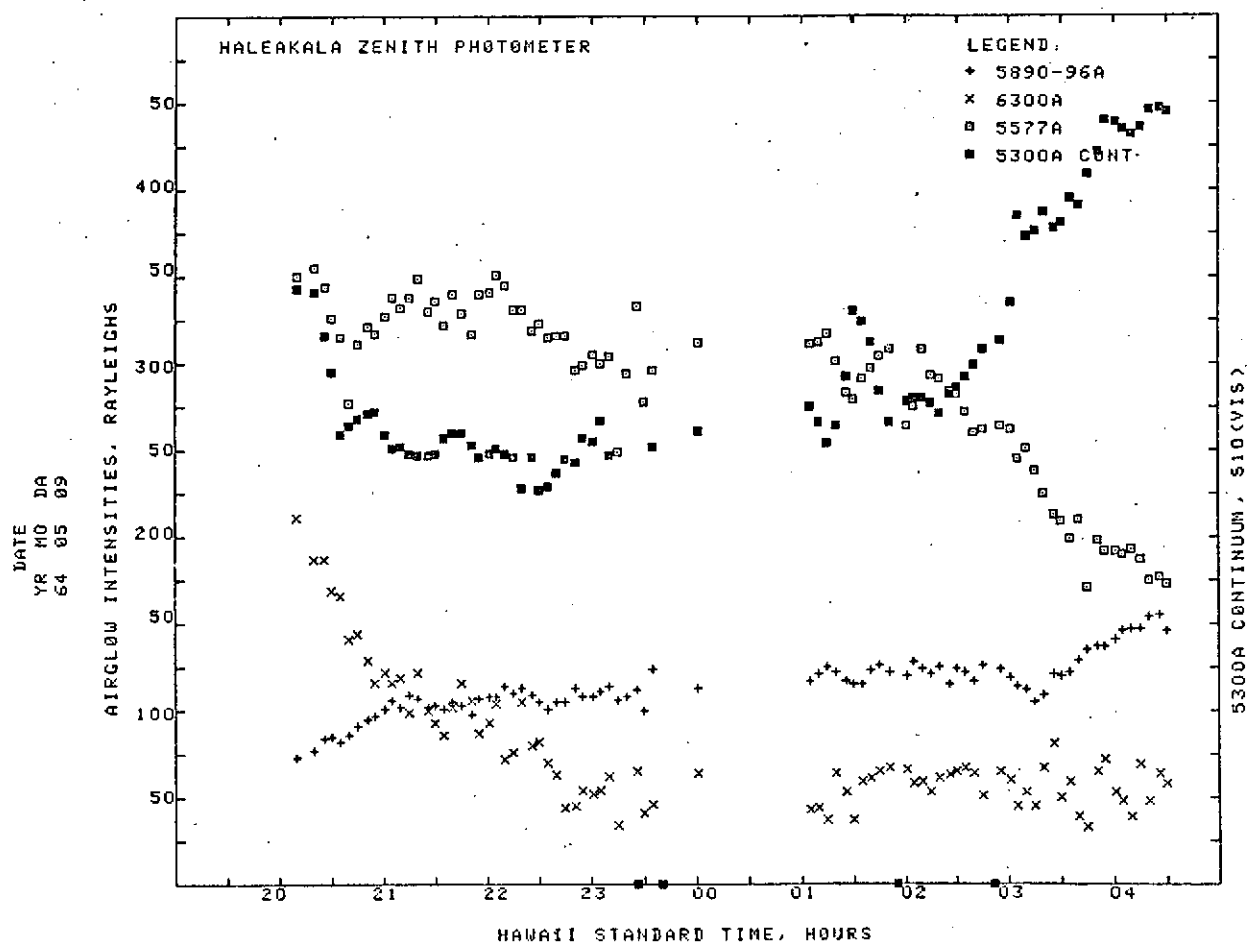
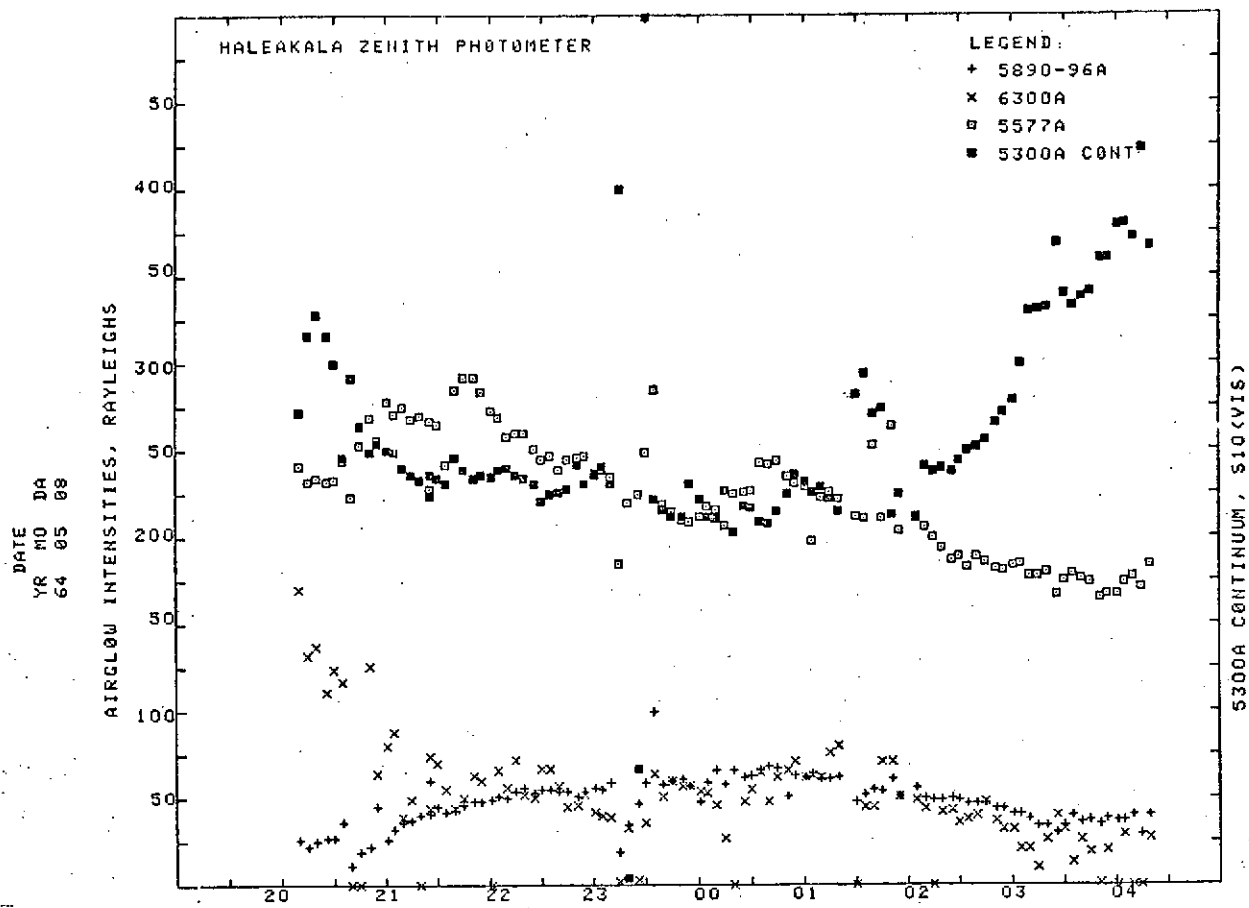


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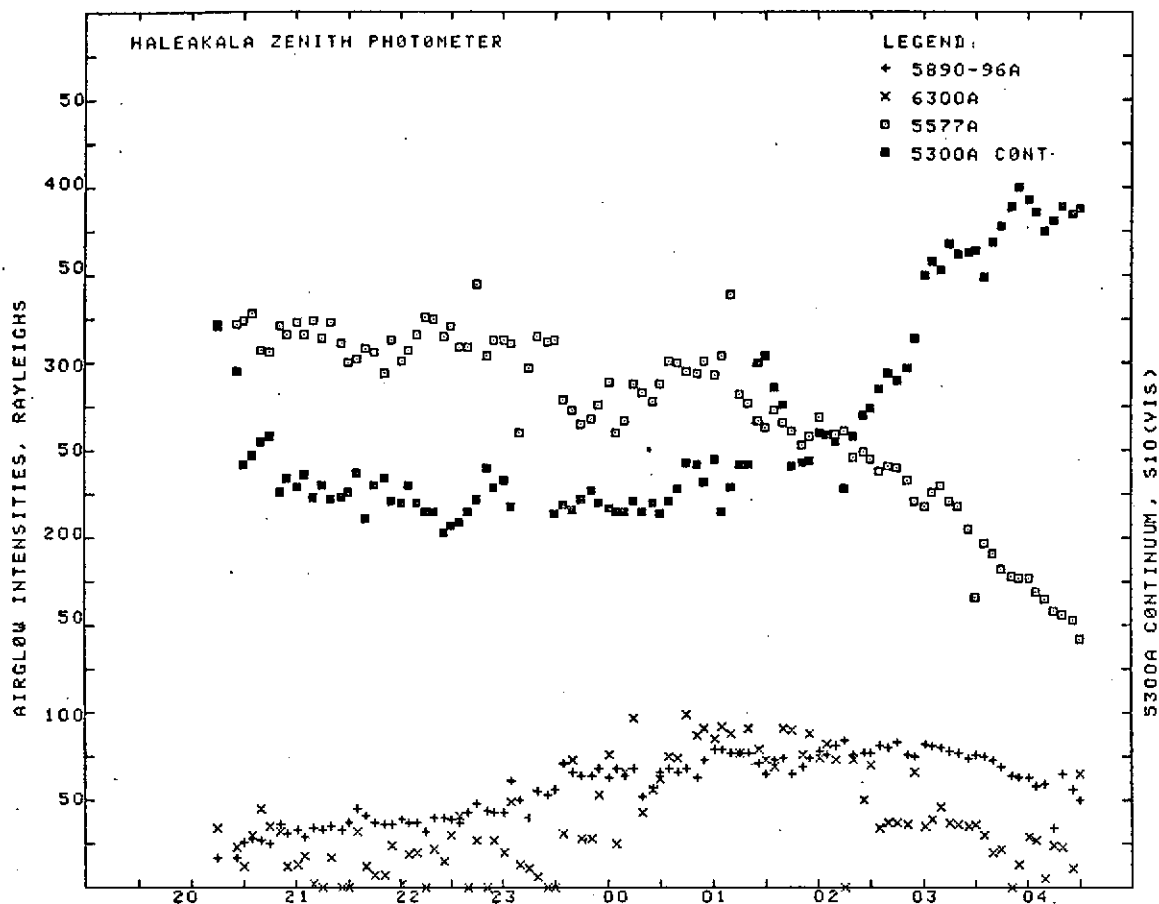


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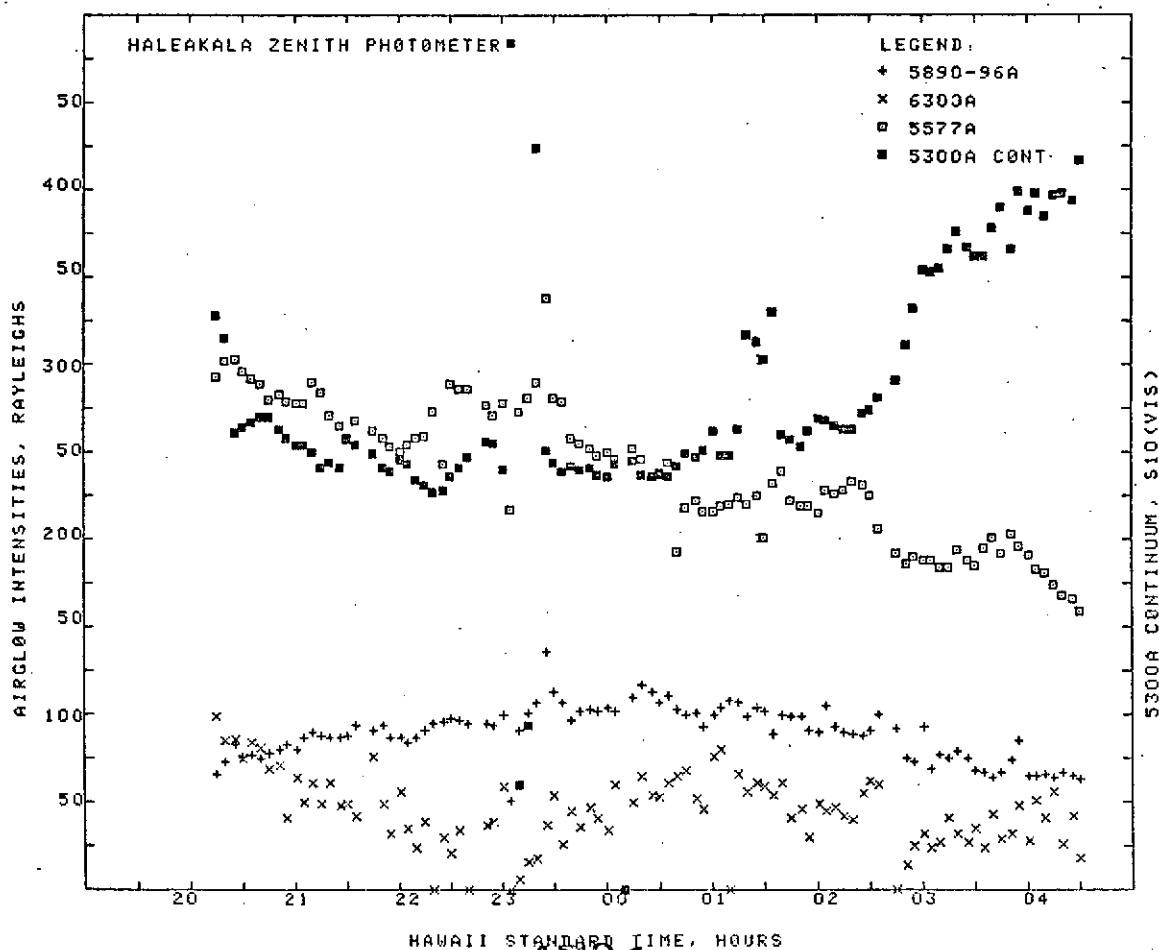


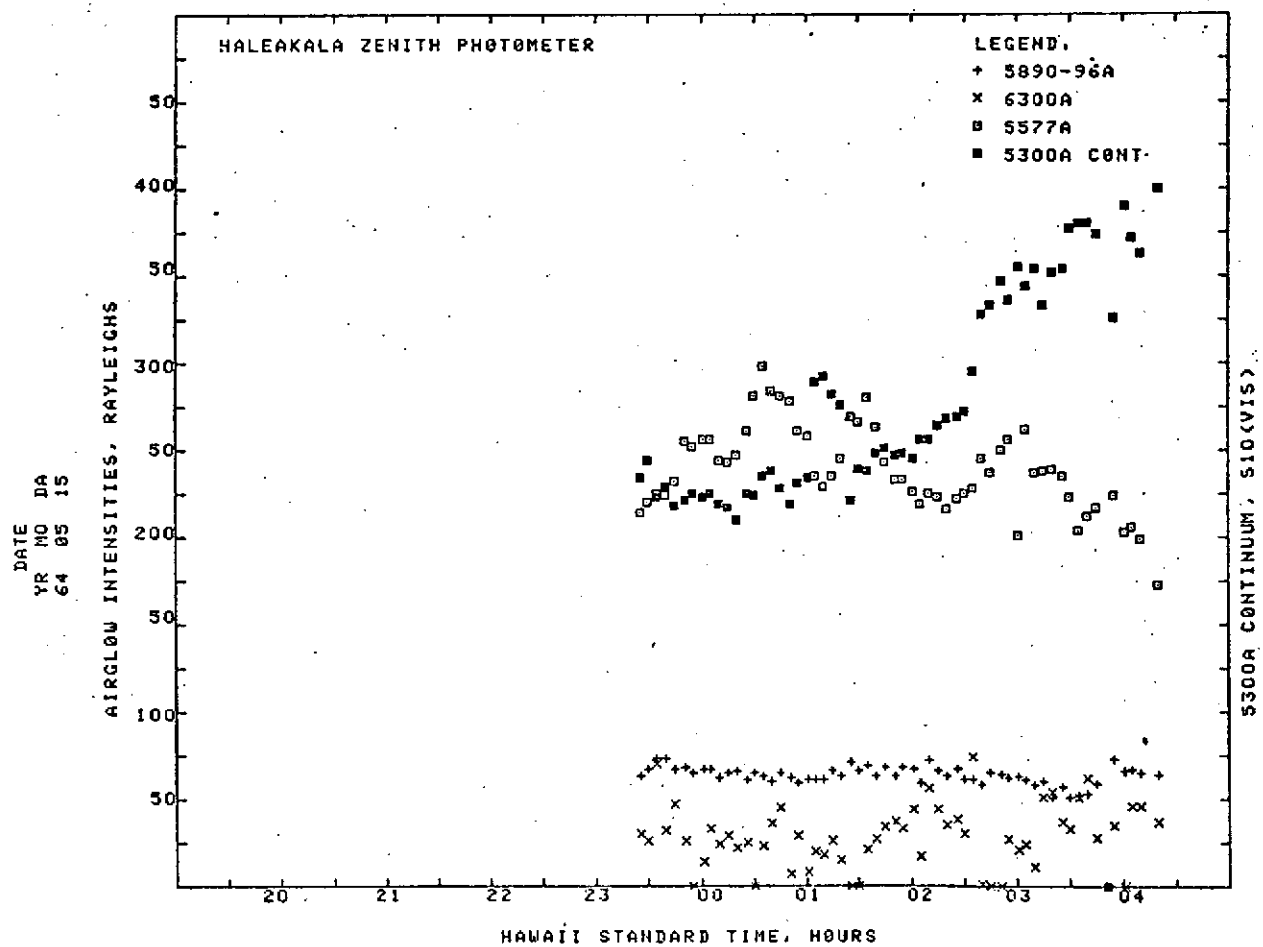
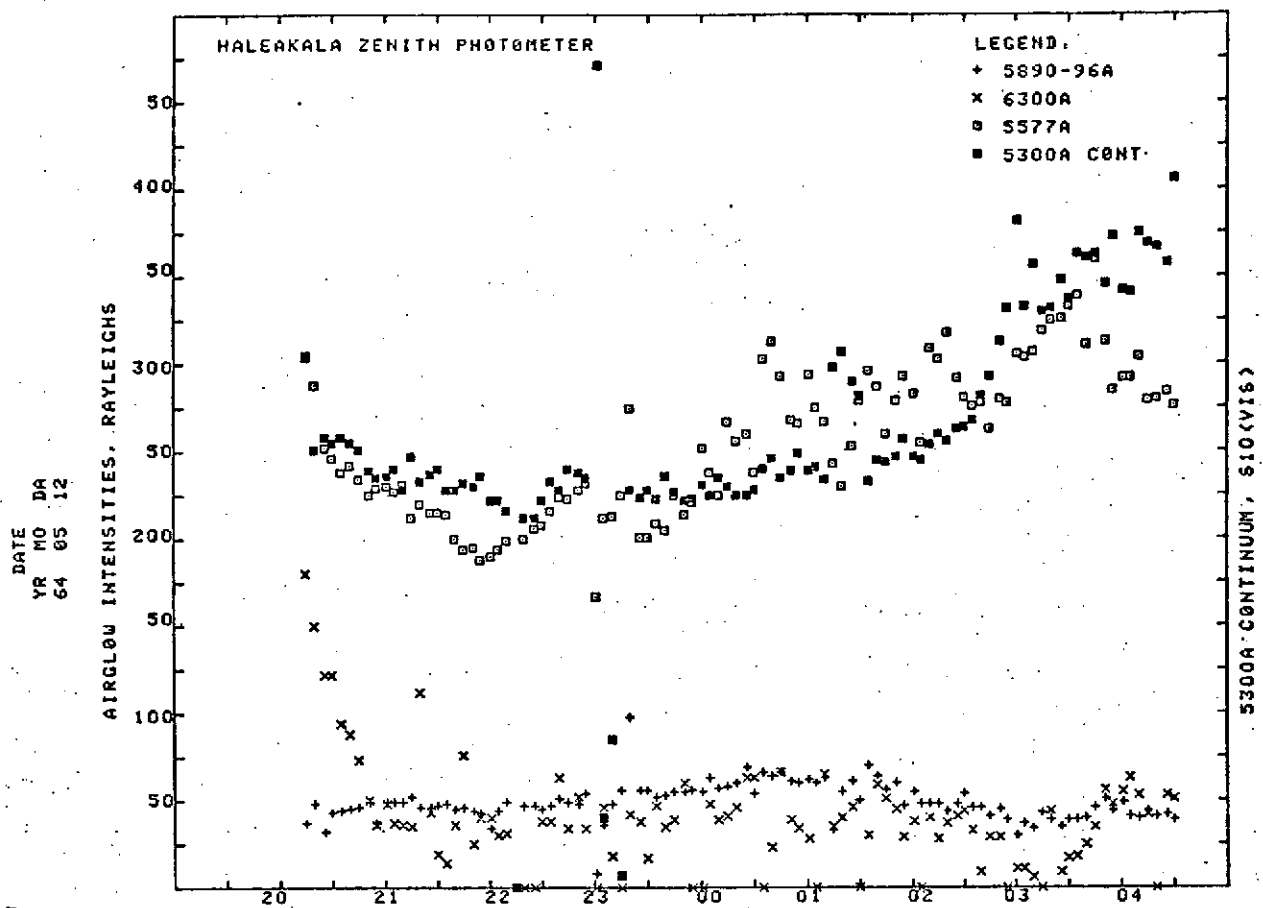


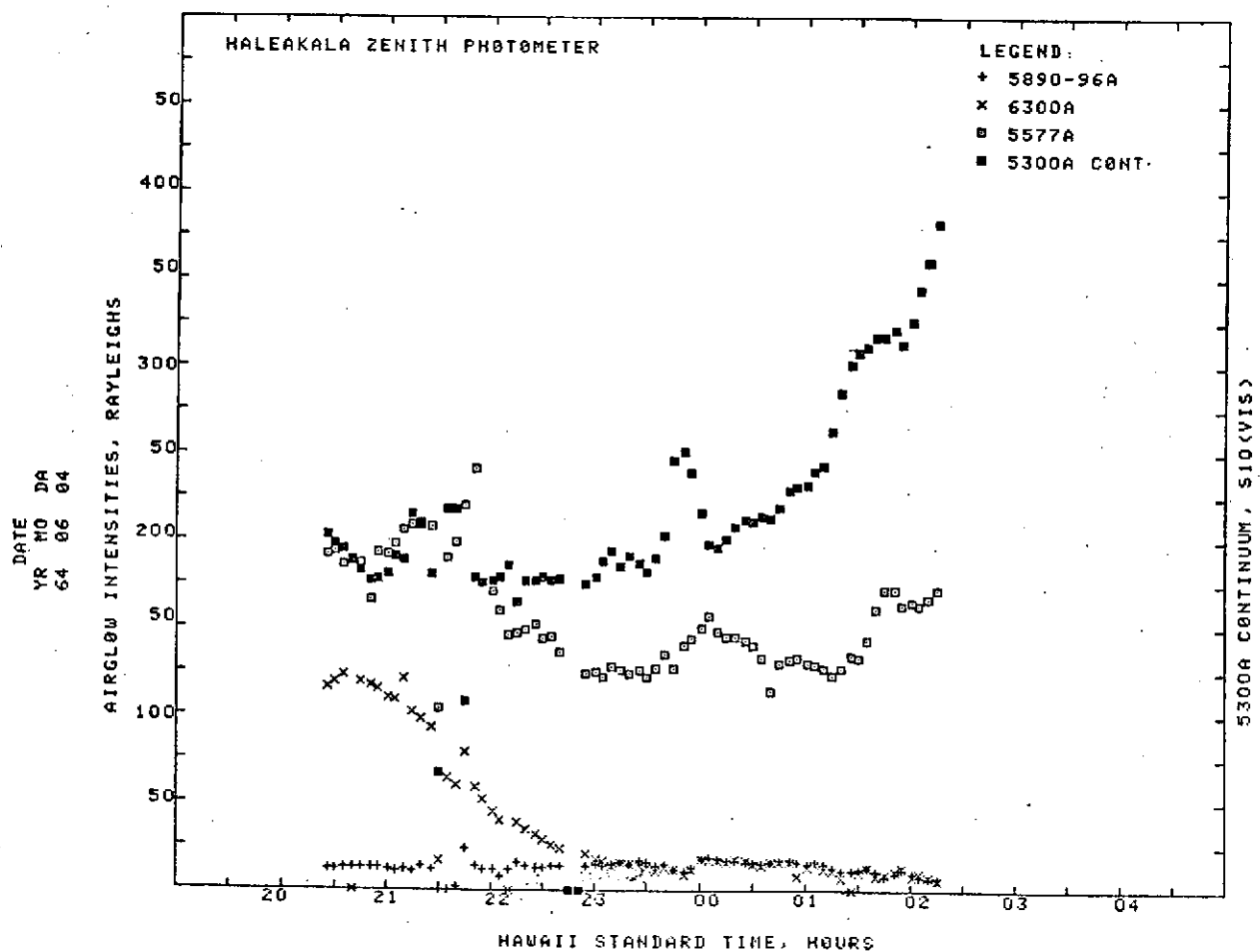
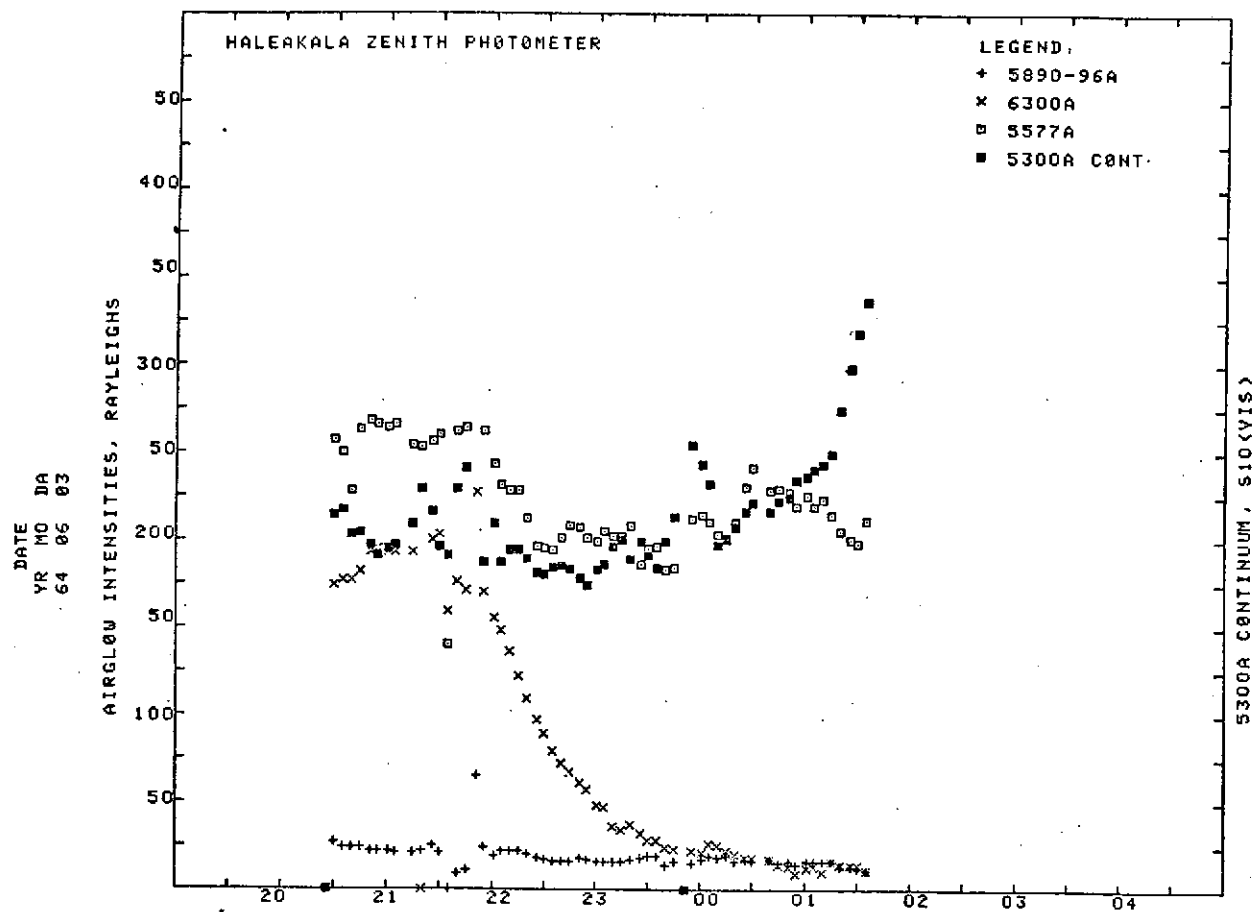
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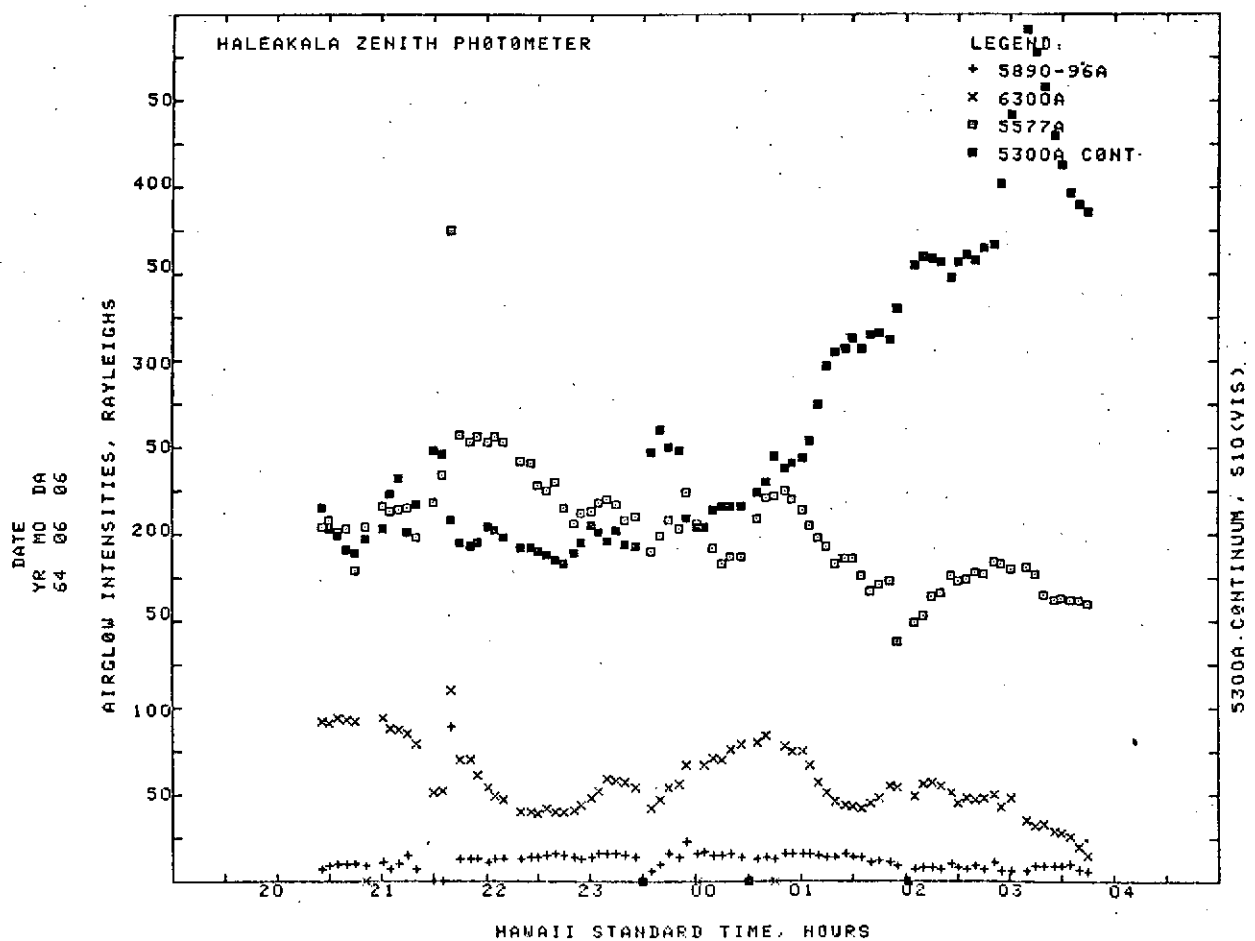
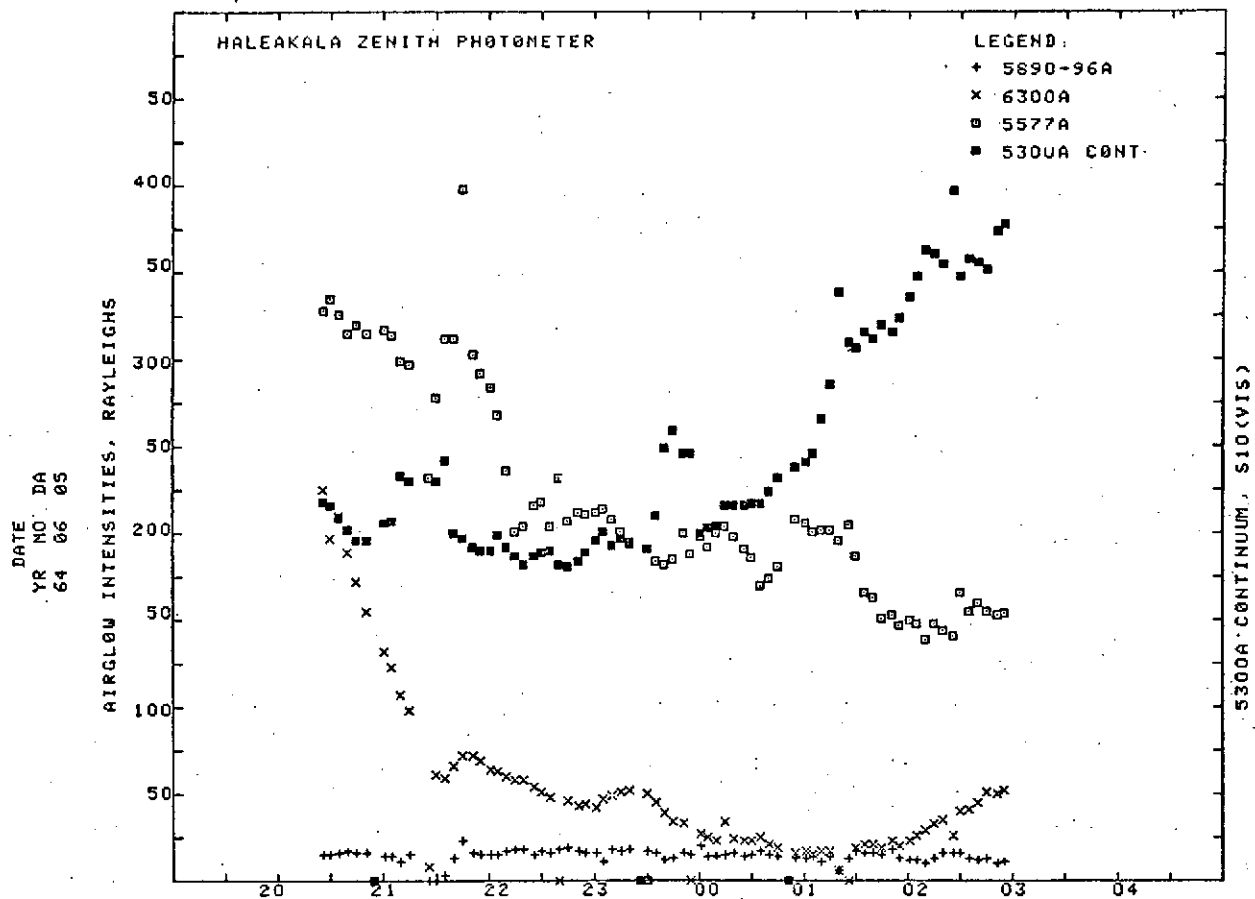


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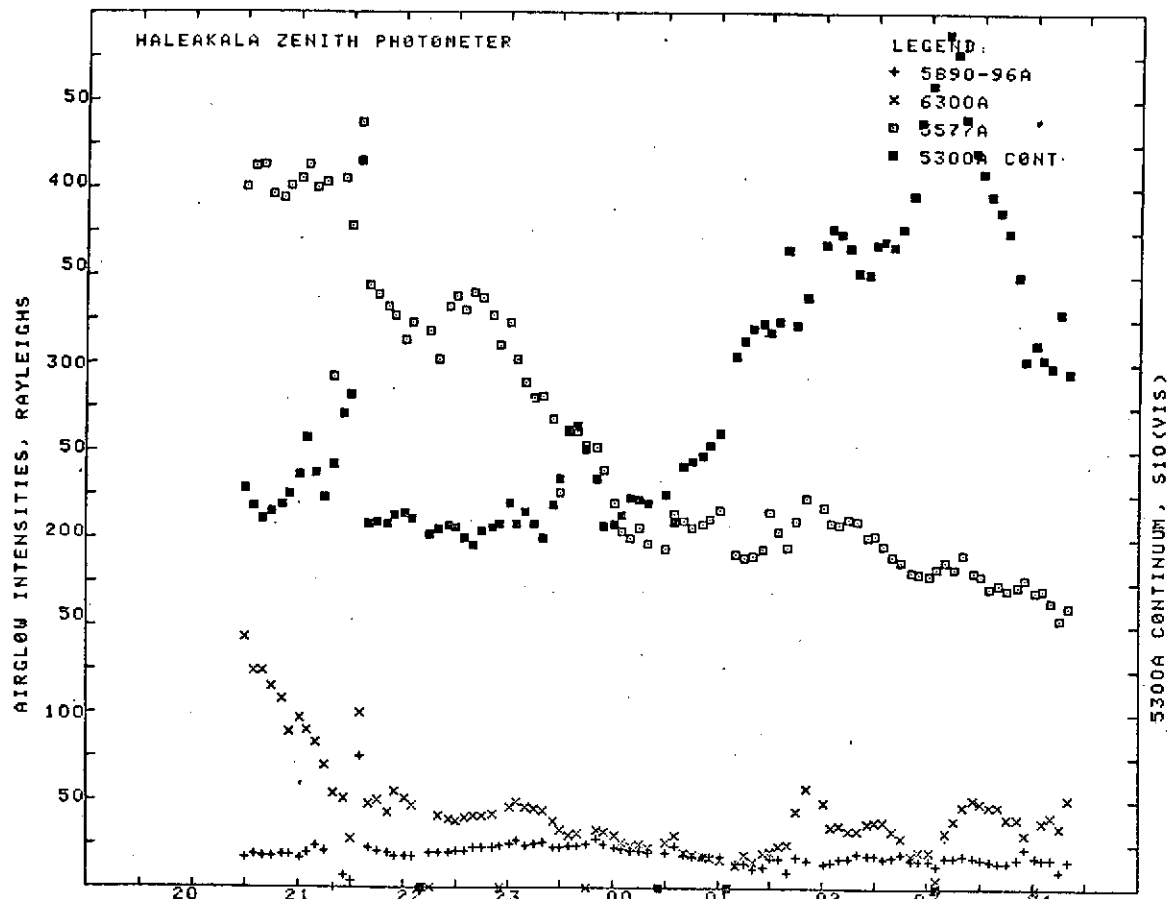




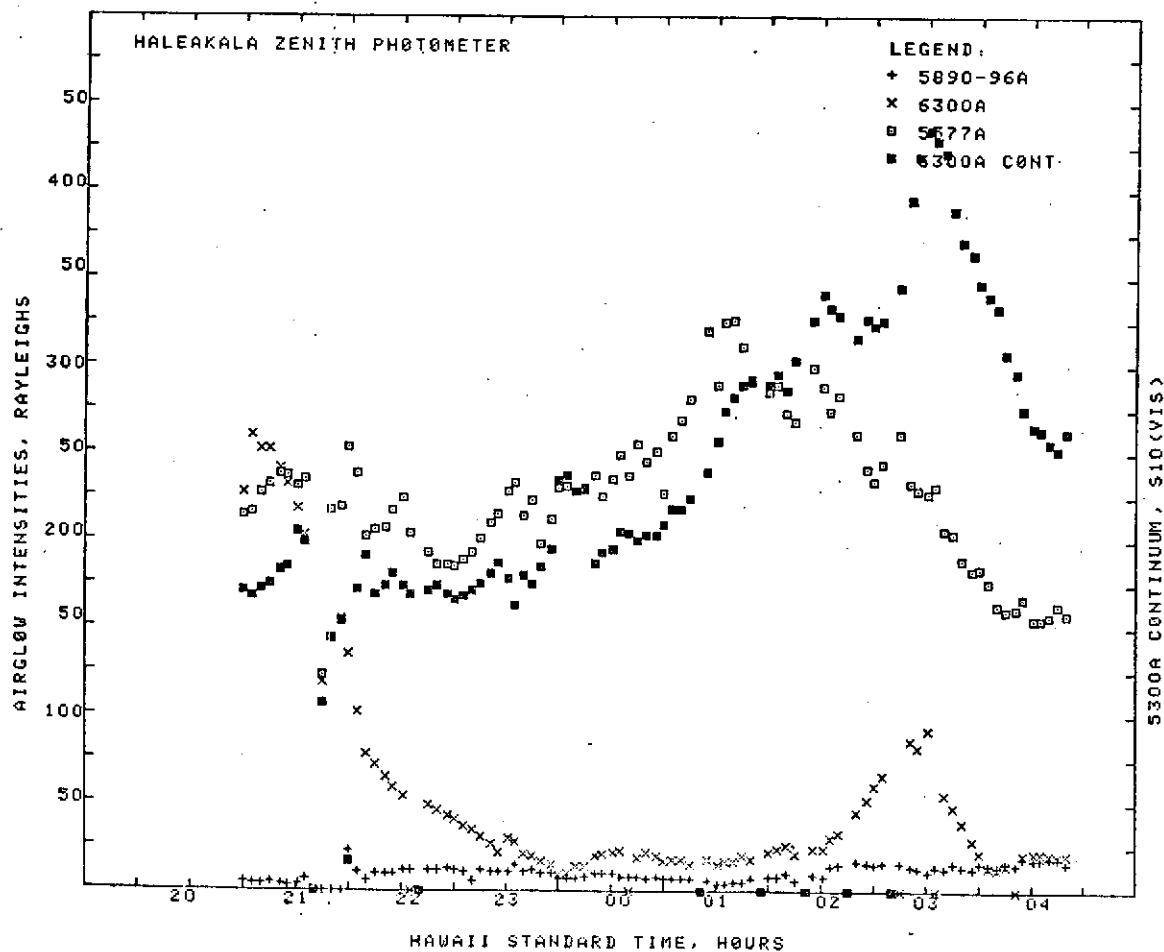


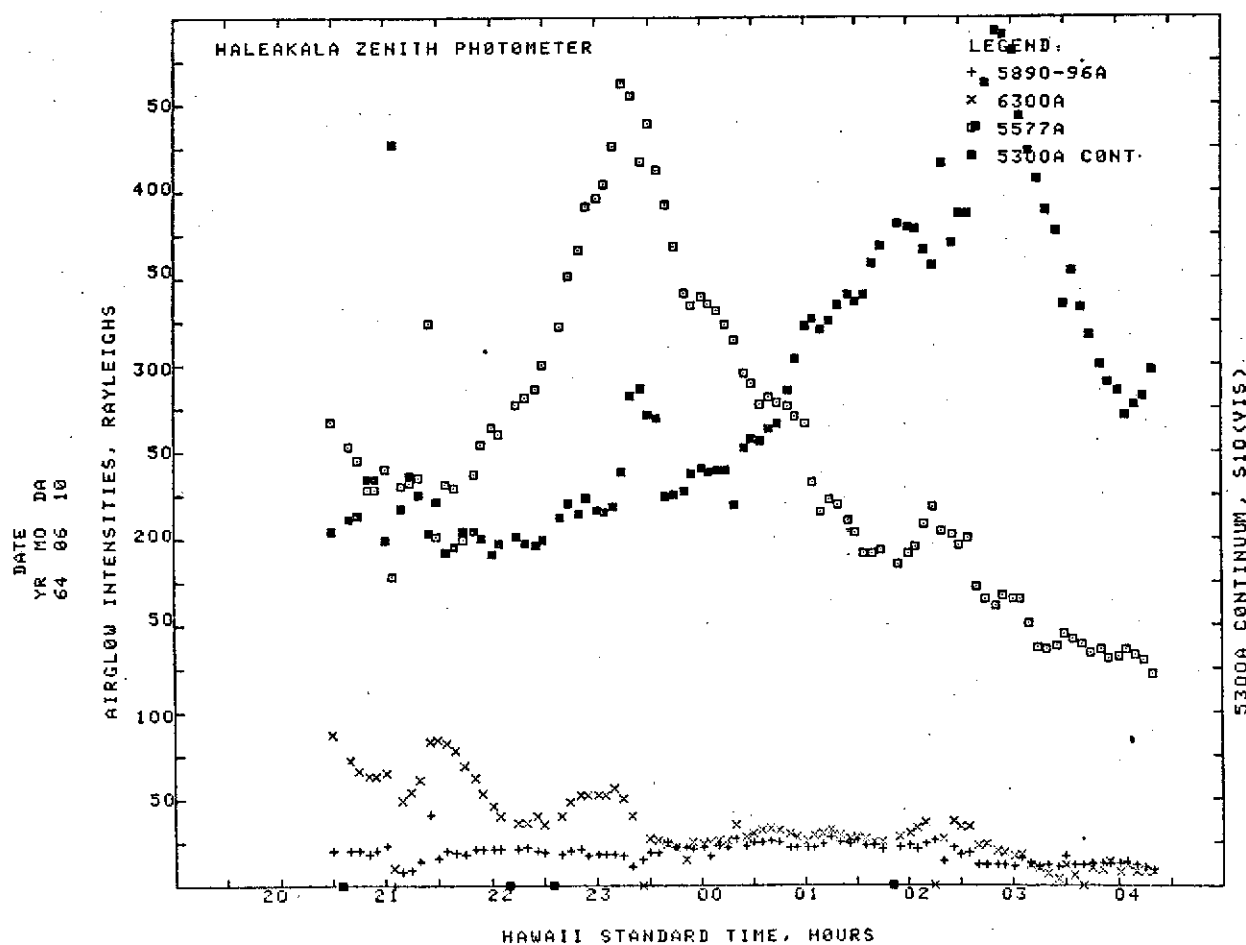
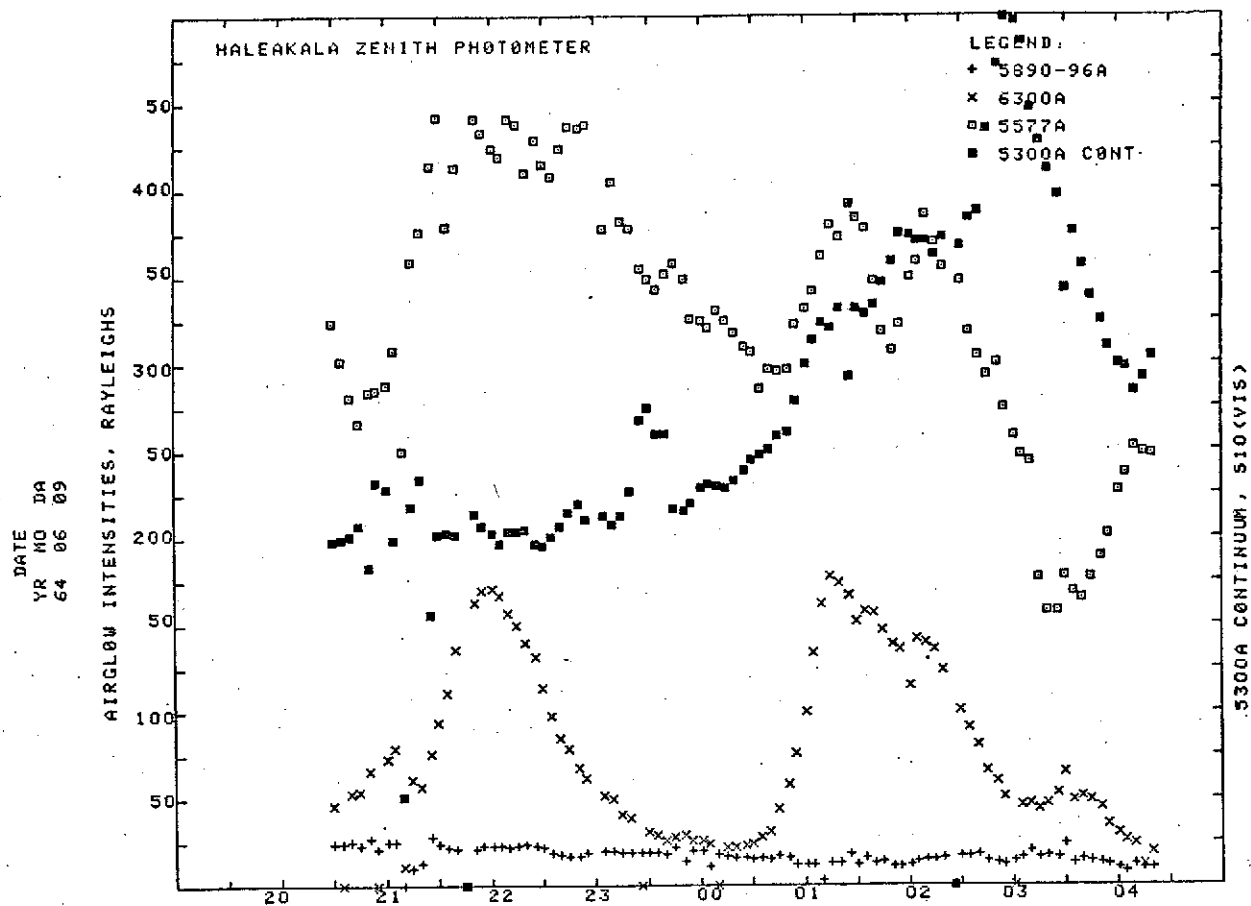


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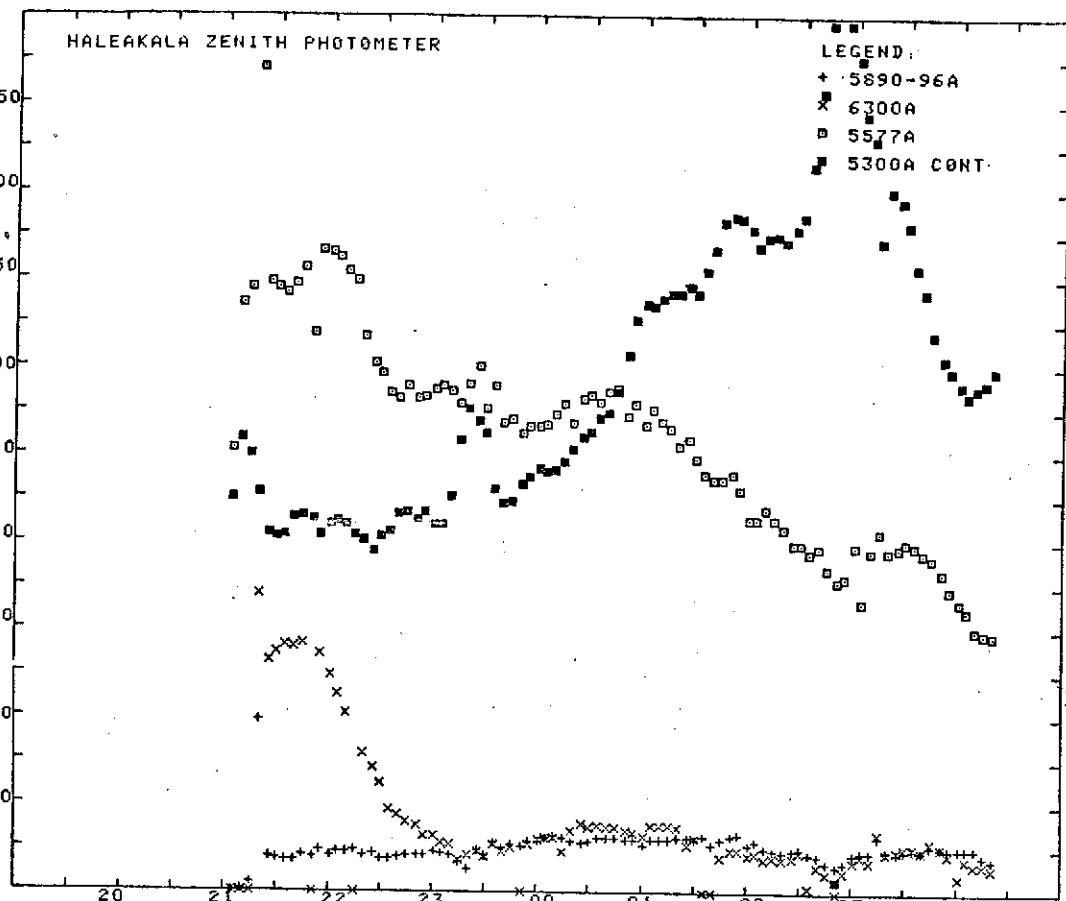






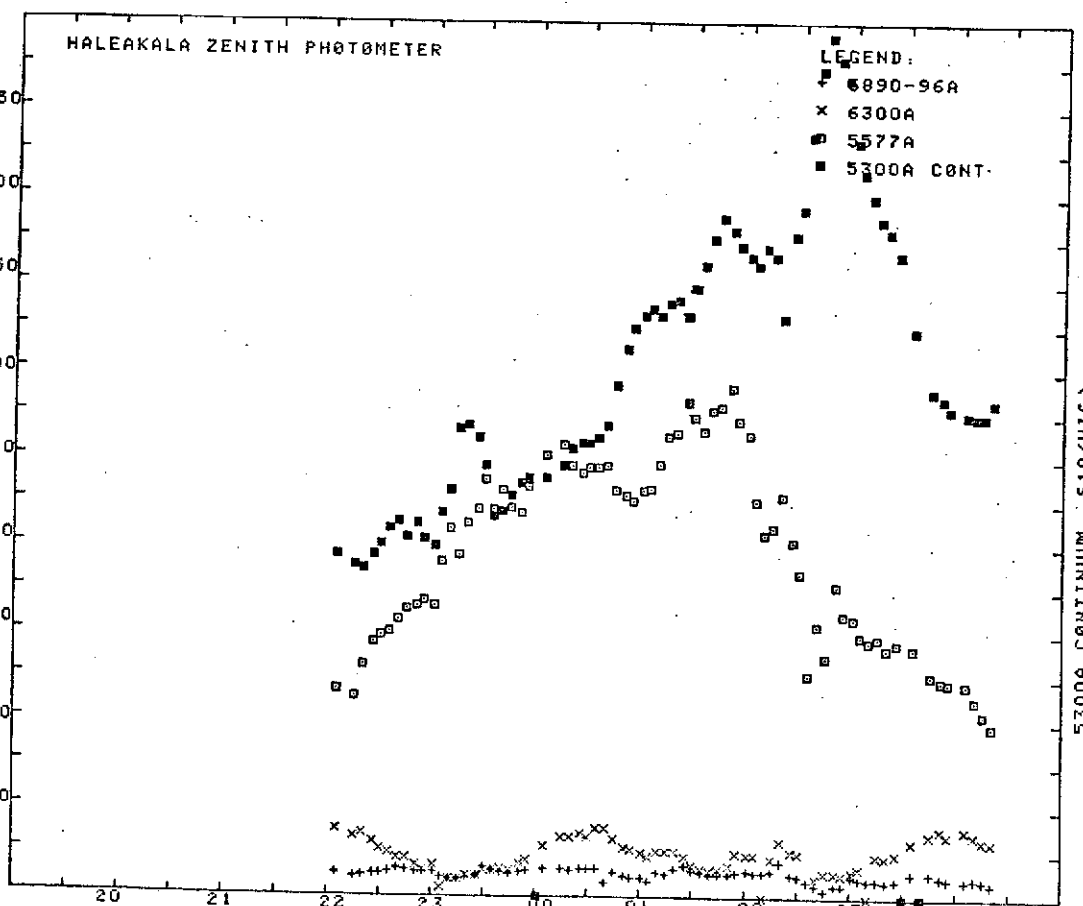
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AIRGLOW INTENSITIES, RAYLEIGHS



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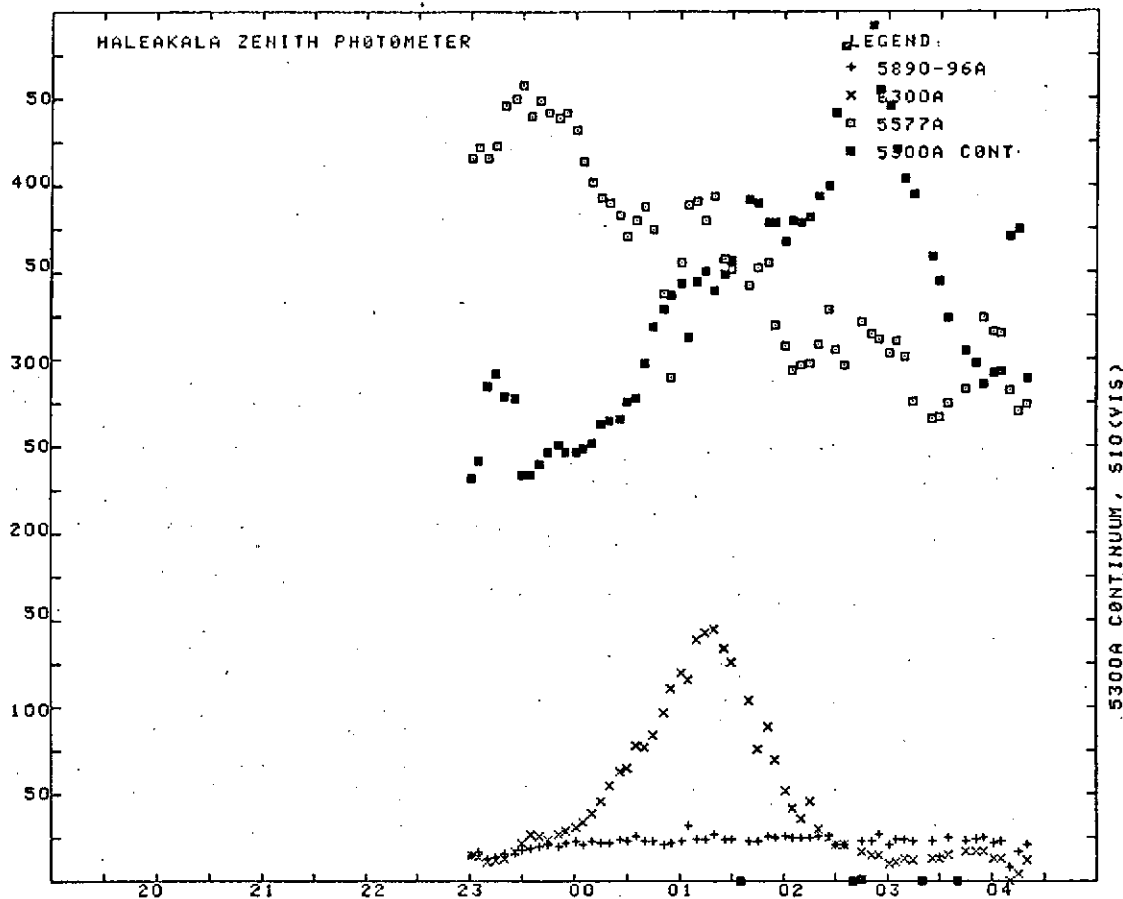
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HAWAII STANDARD TIME, HOURS

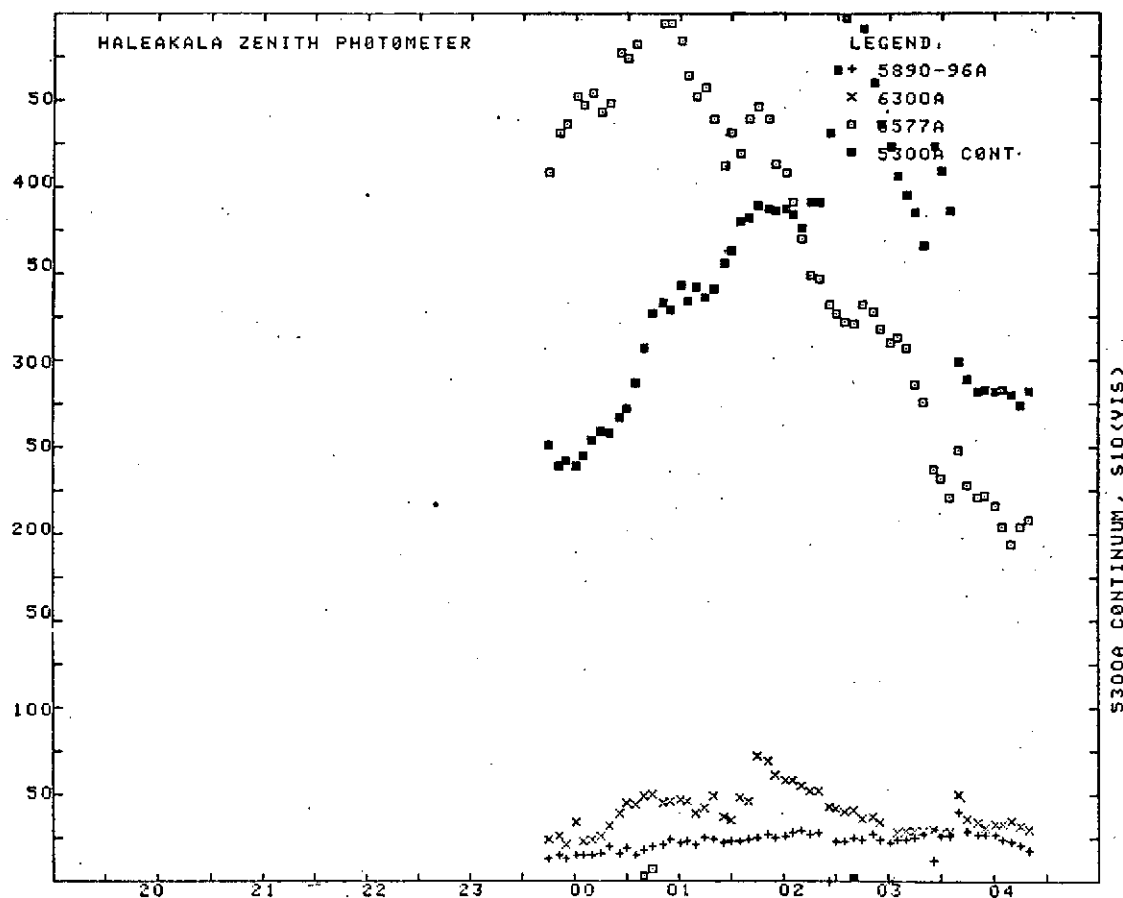
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AIRGLOW INTENSITIES, RAYLEIGHS



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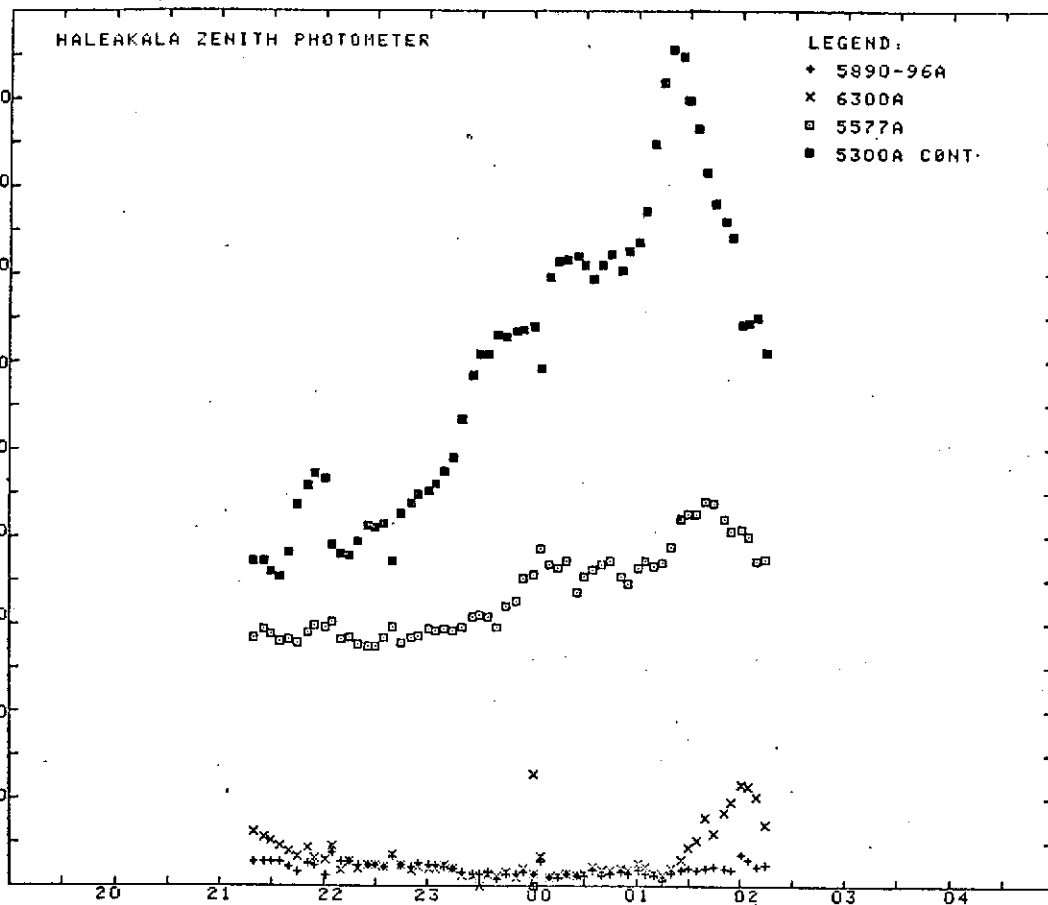
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HAWAII STANDARD TIME, HOURS

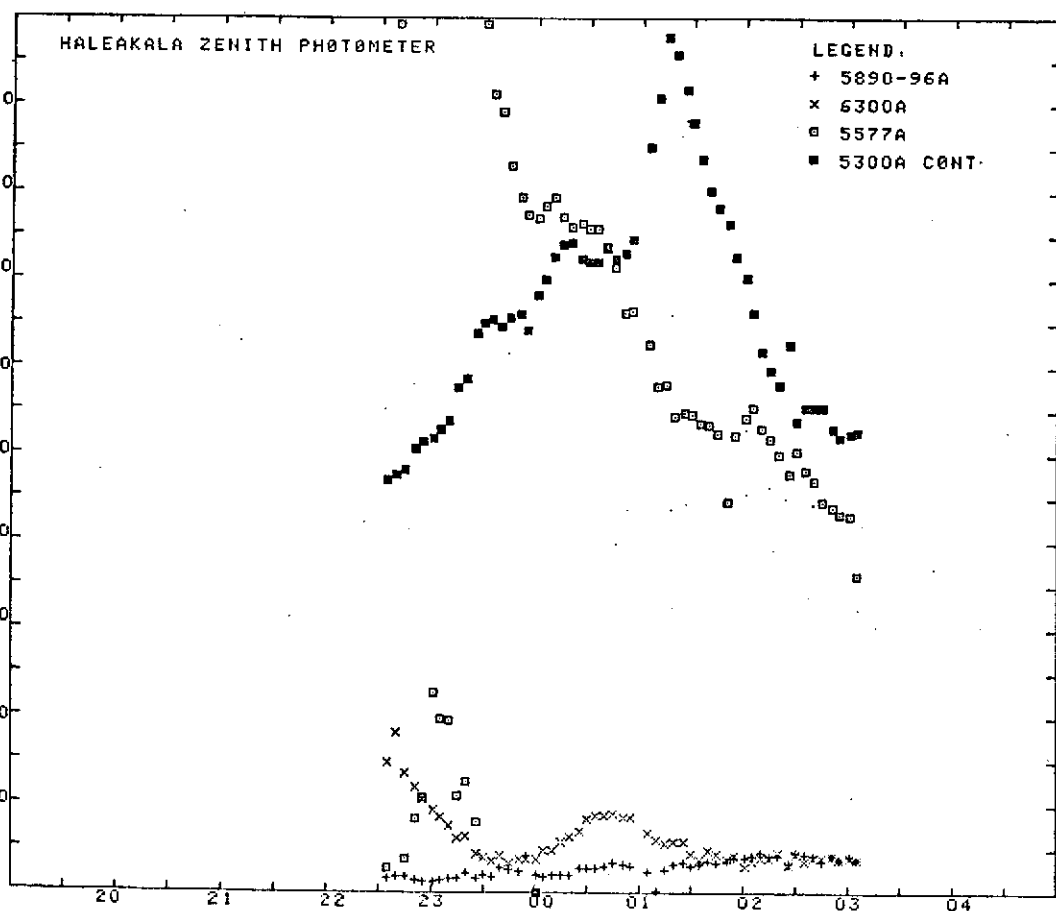
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AIRGLOW INTENSITIES, RAYLEIGHS



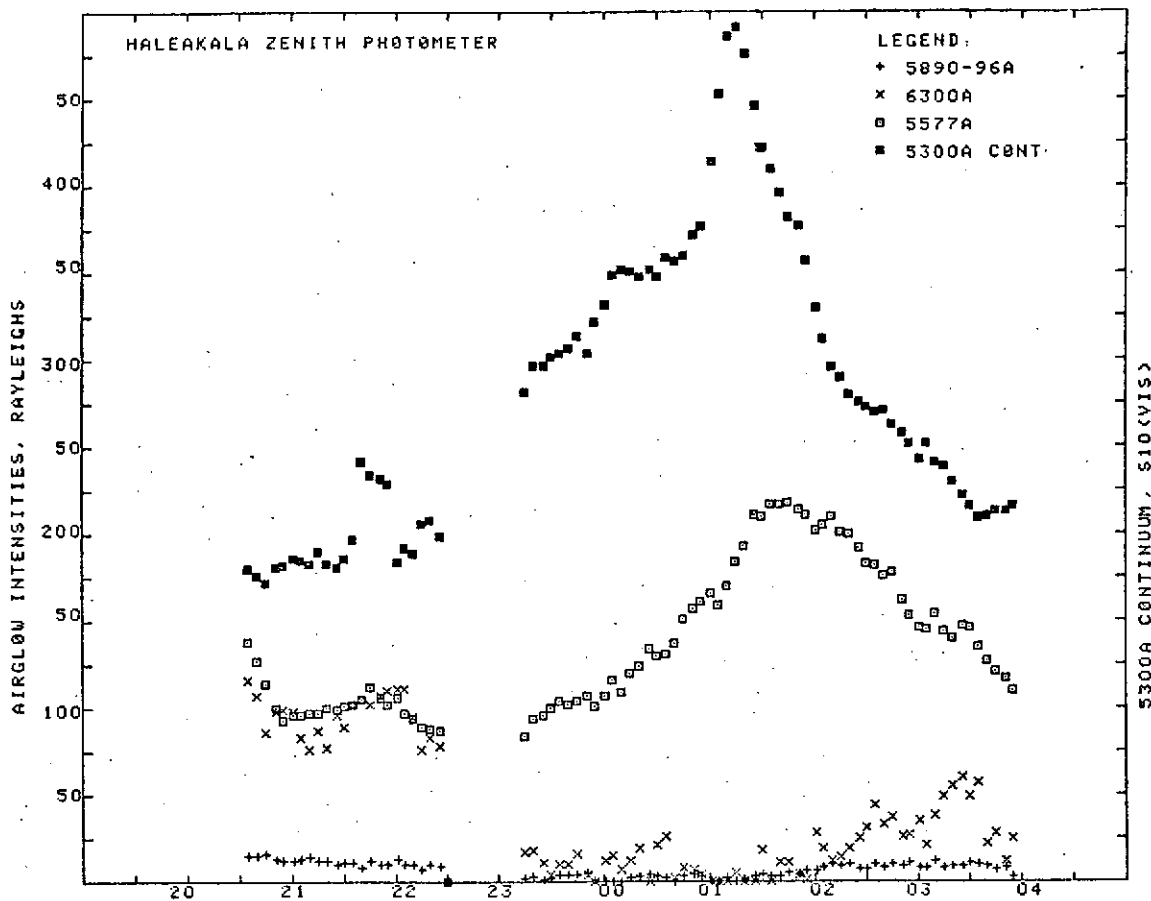
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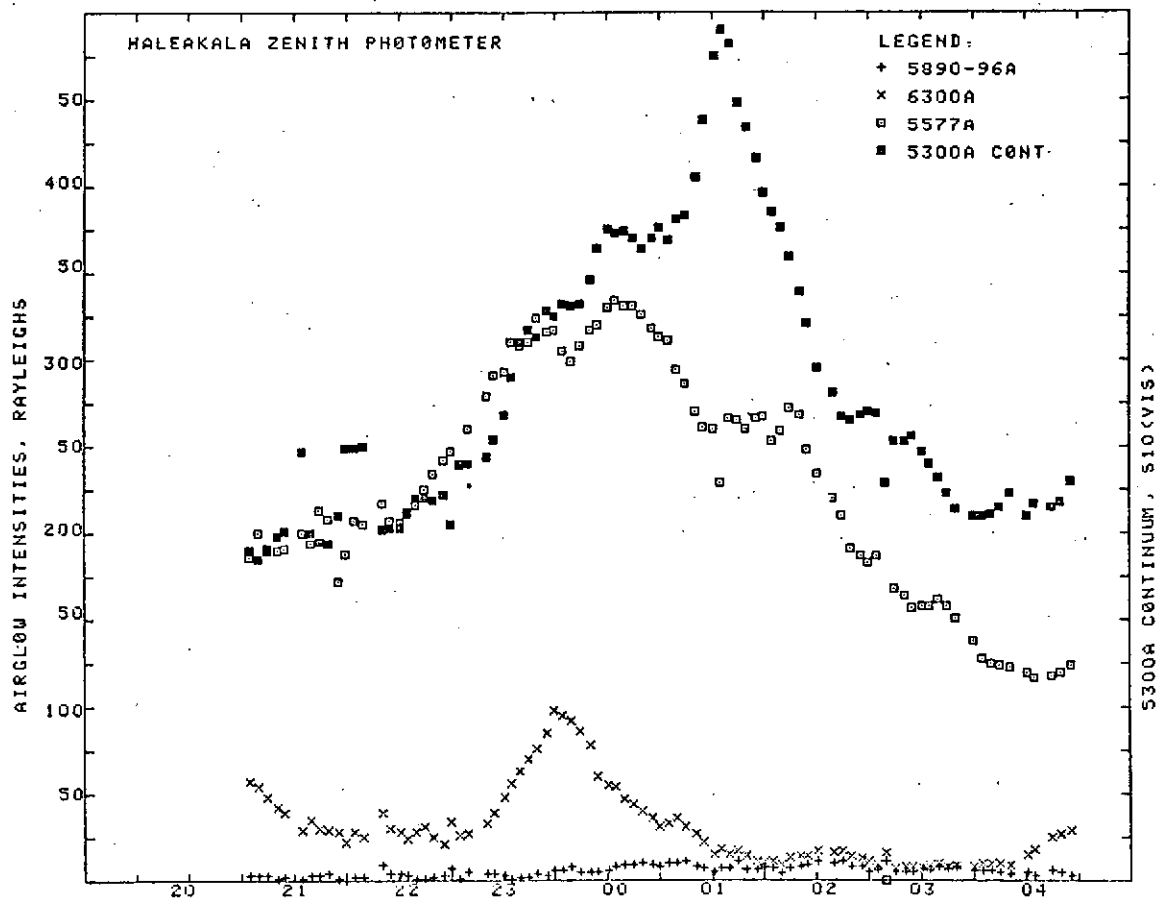


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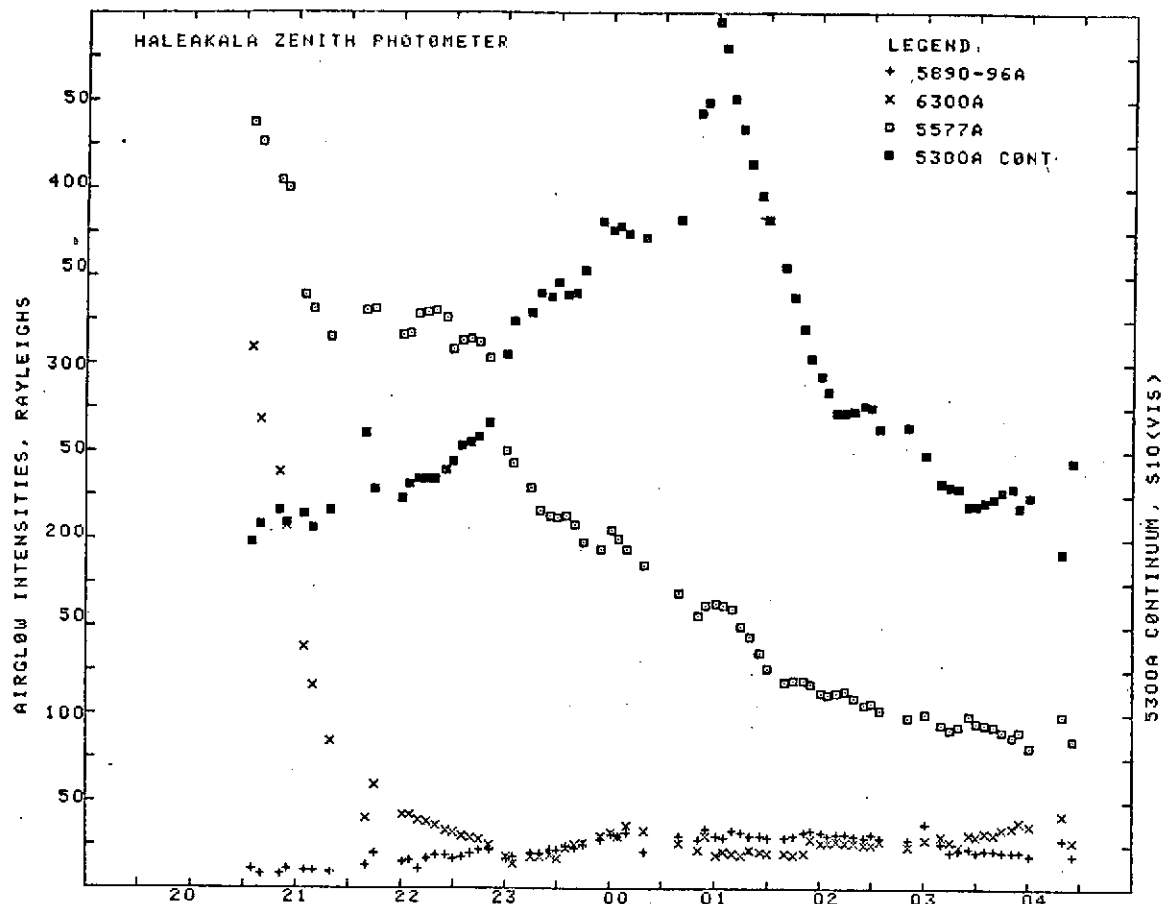


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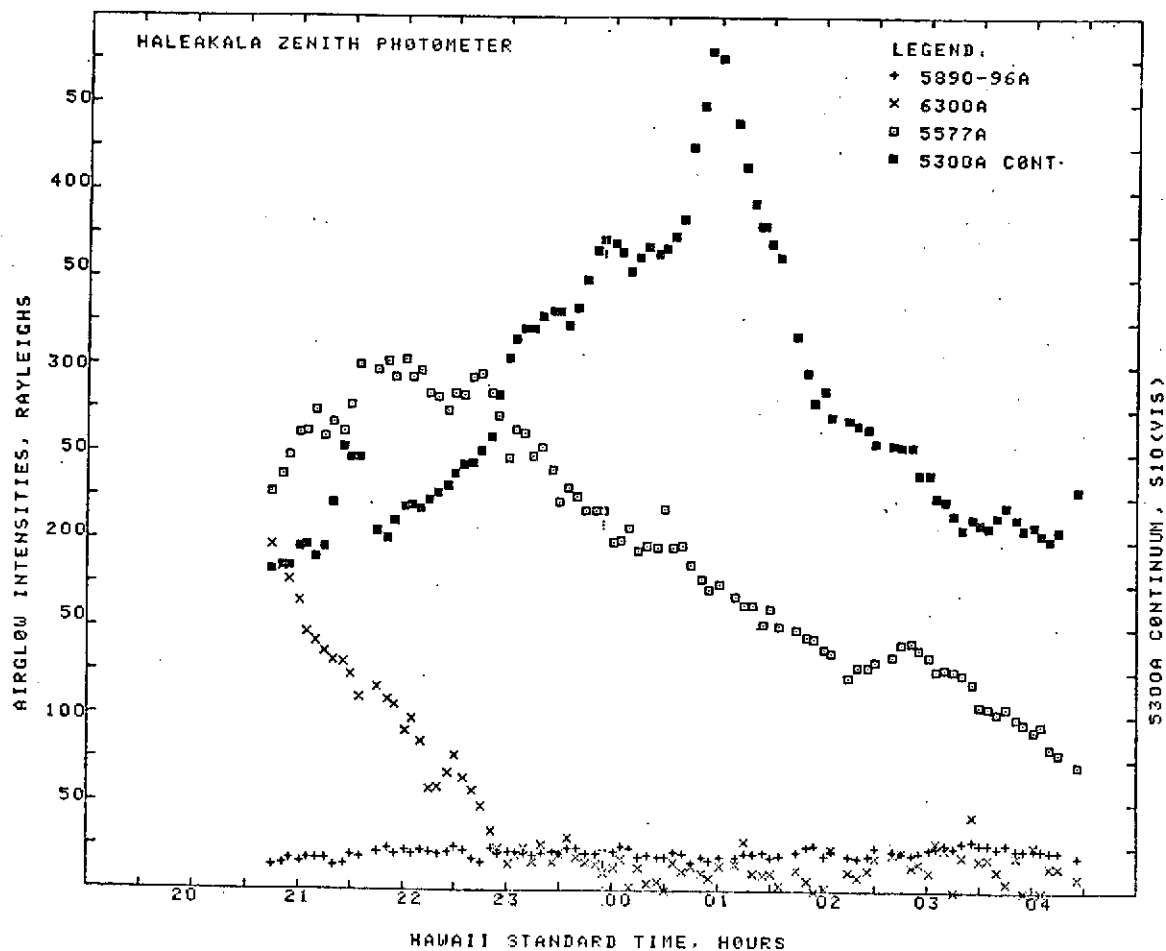


HAWAII STANDARD TIME, HOURS

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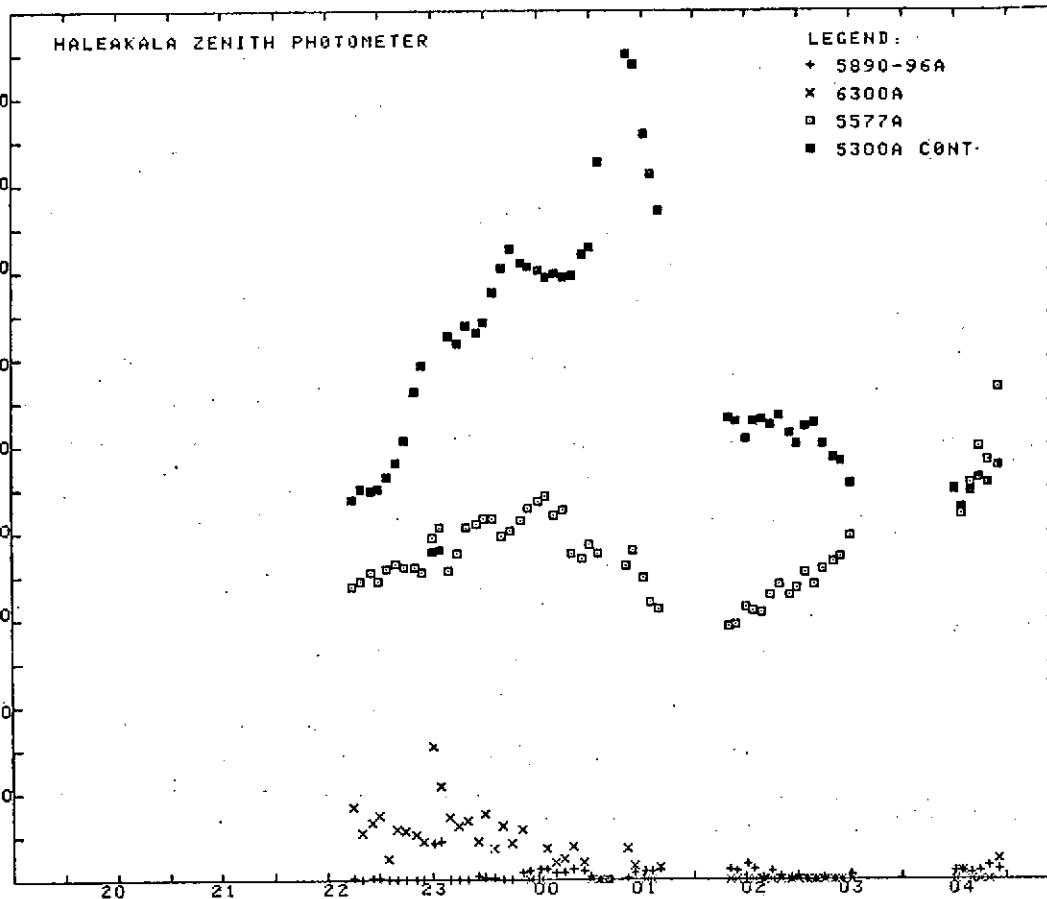


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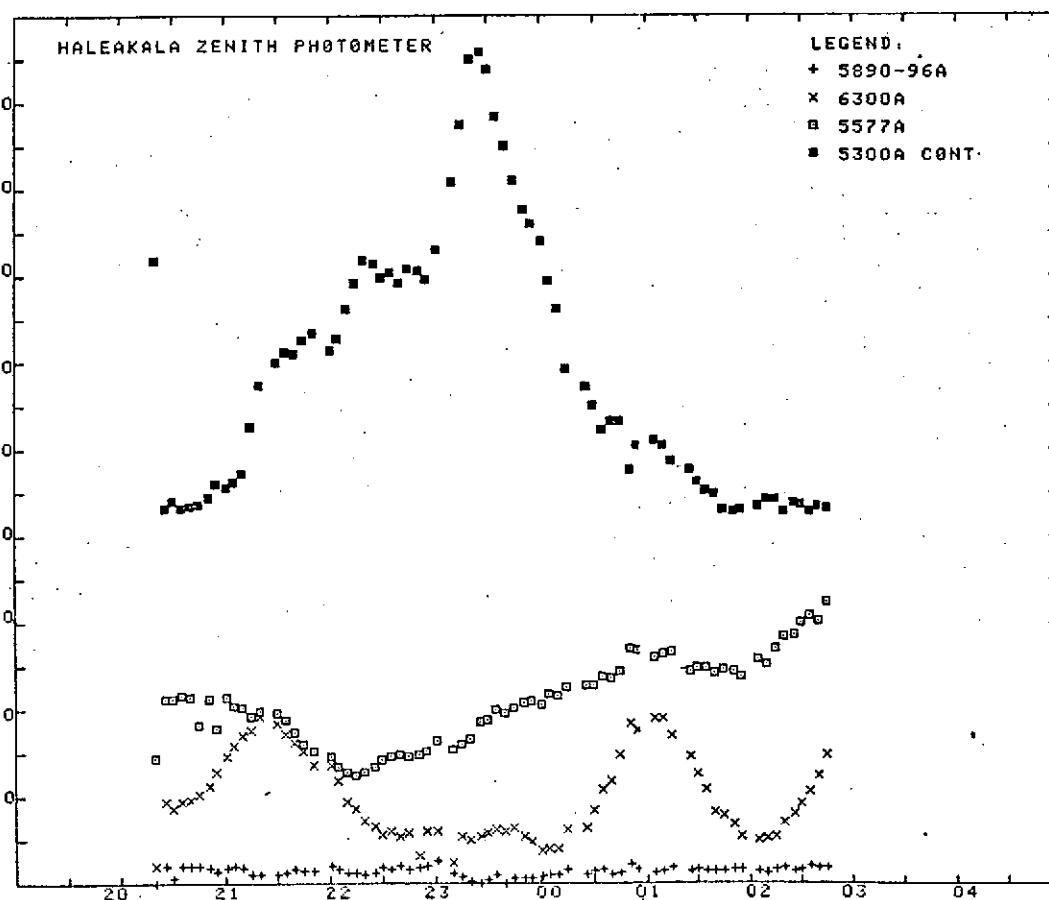
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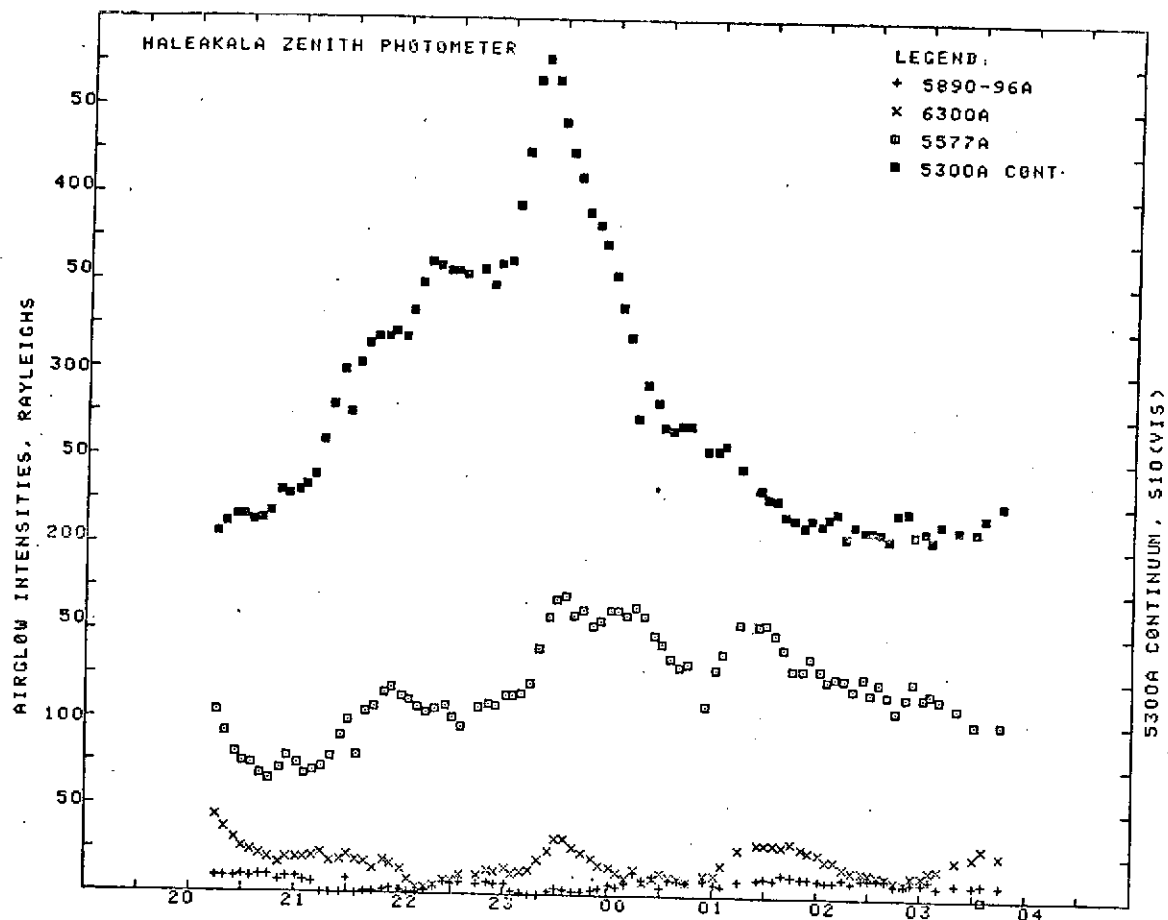
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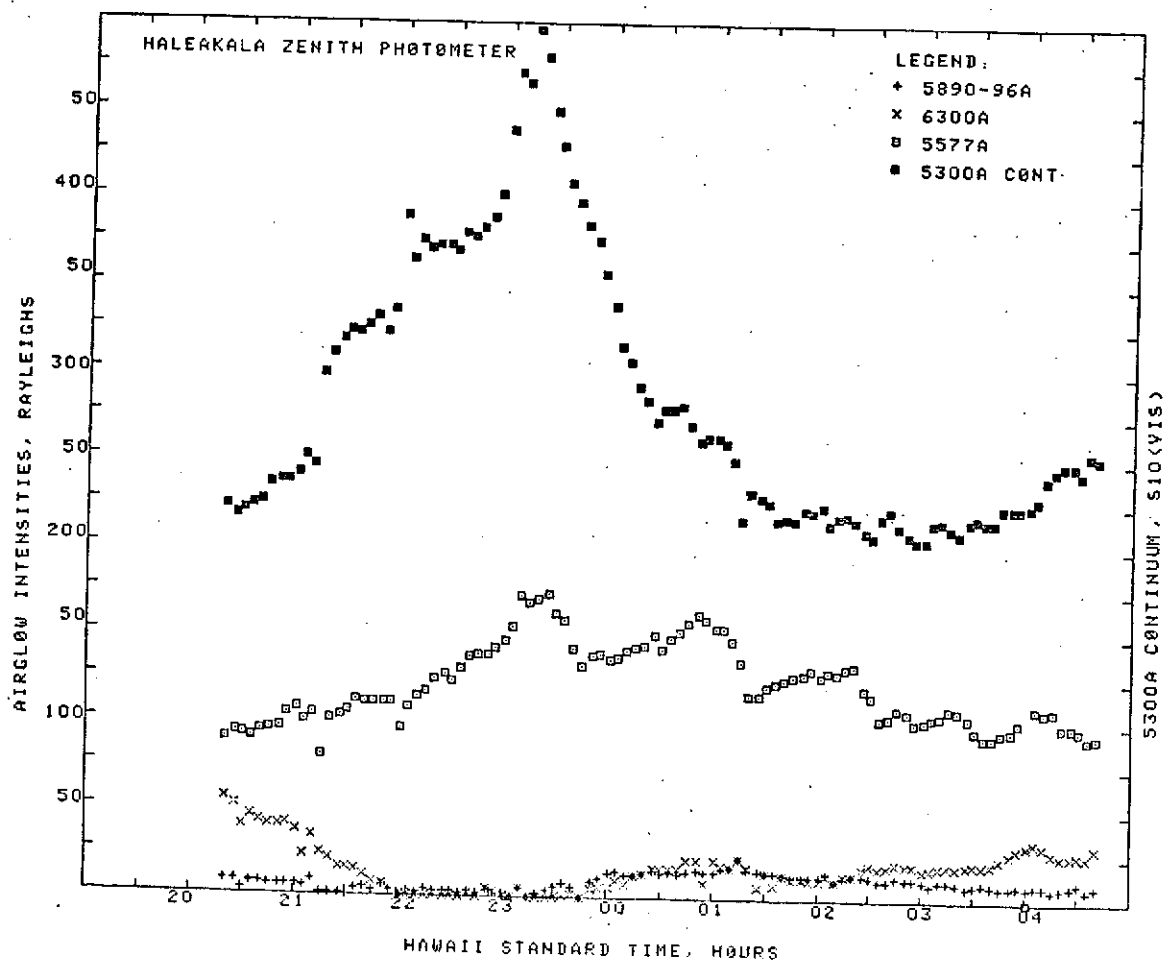
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HAWAII STANDARD TIME, HOURS

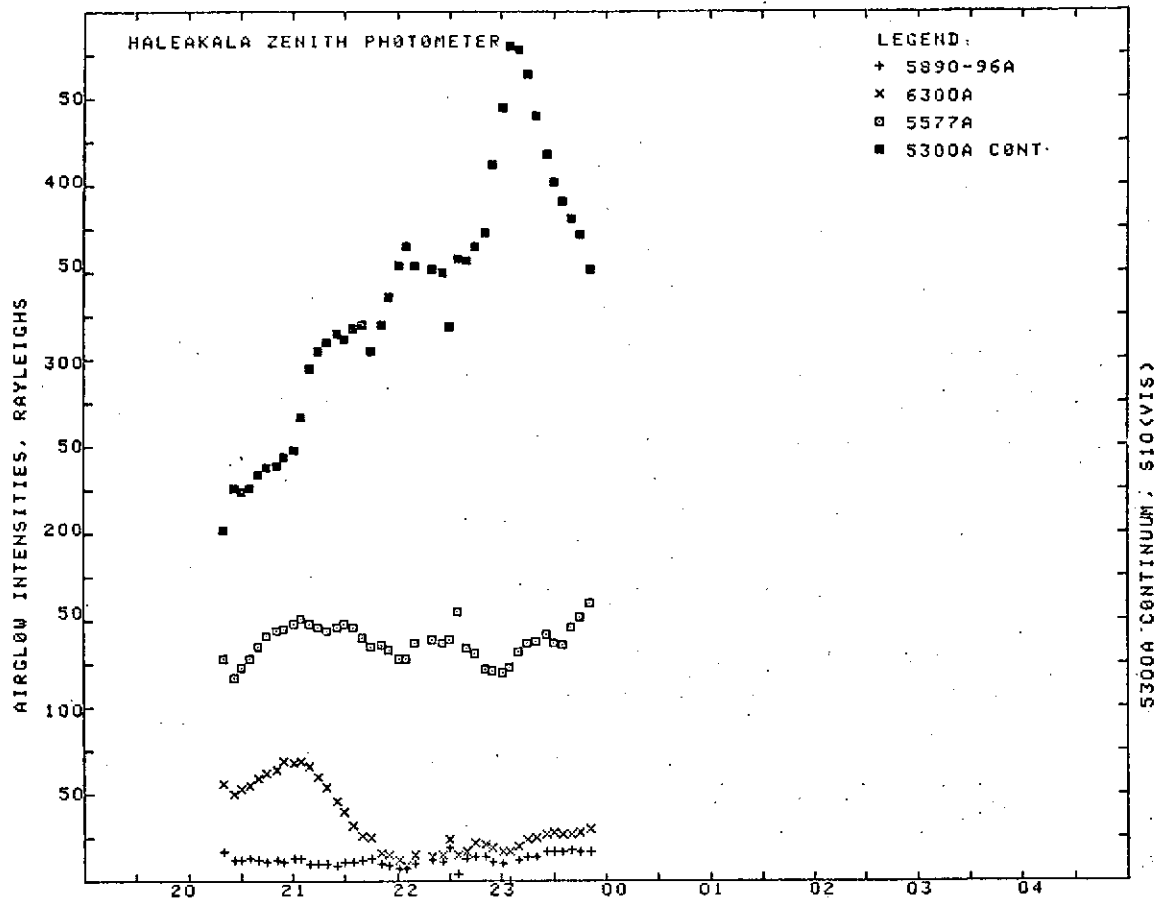
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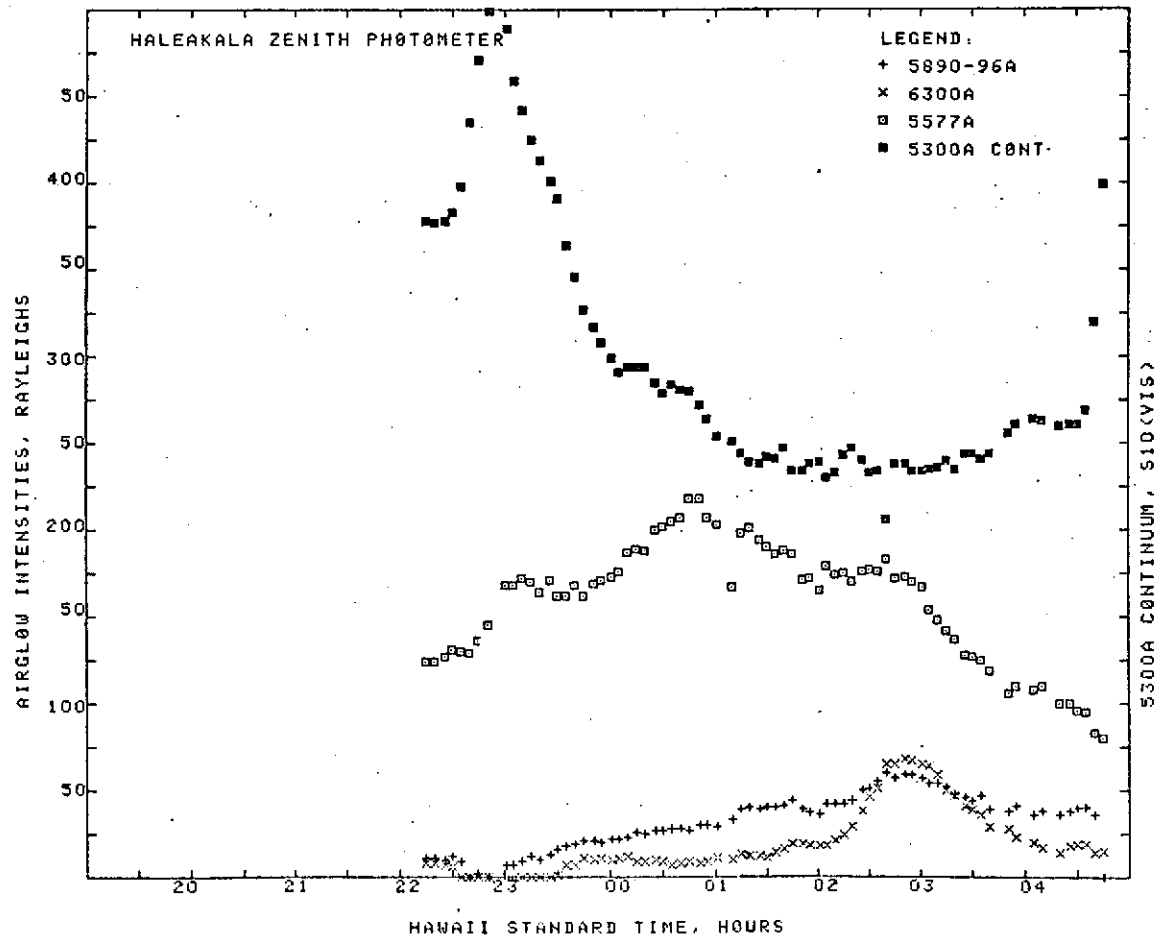
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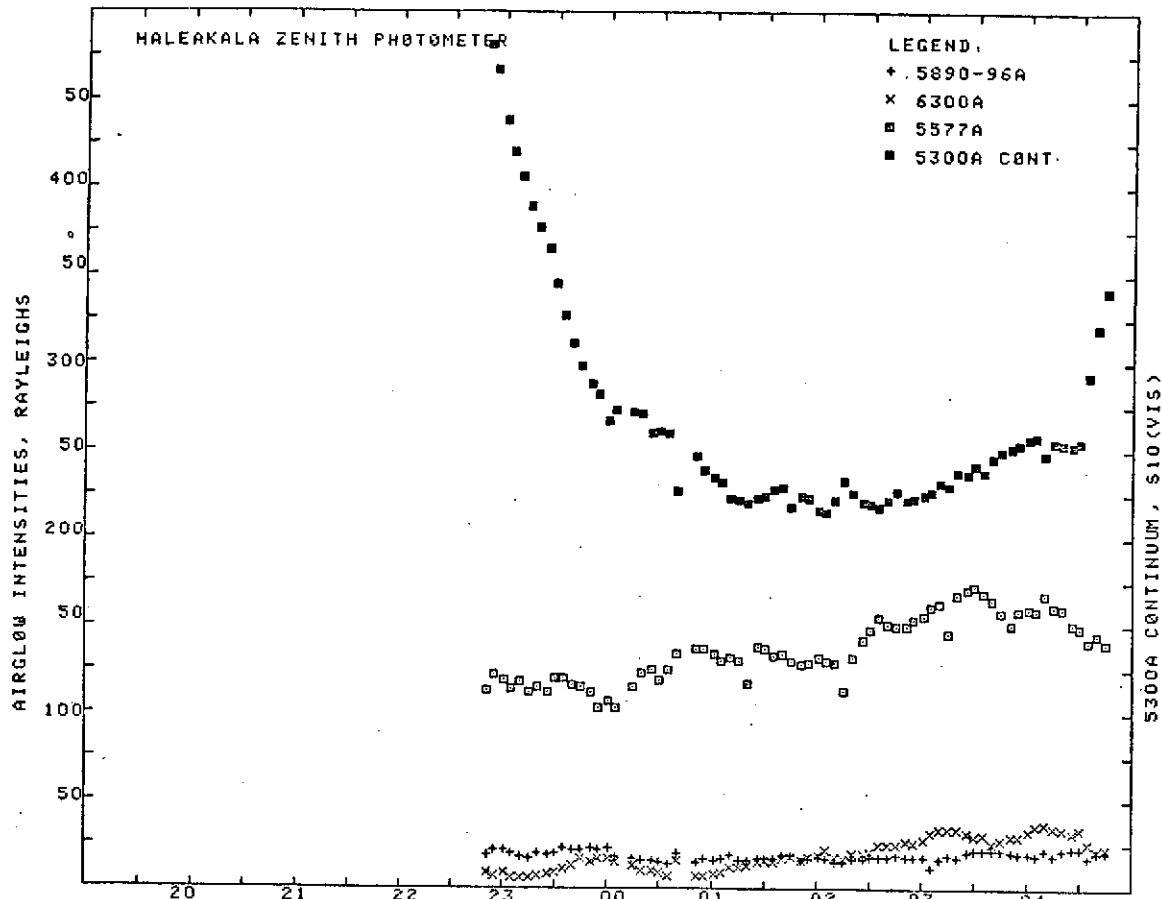


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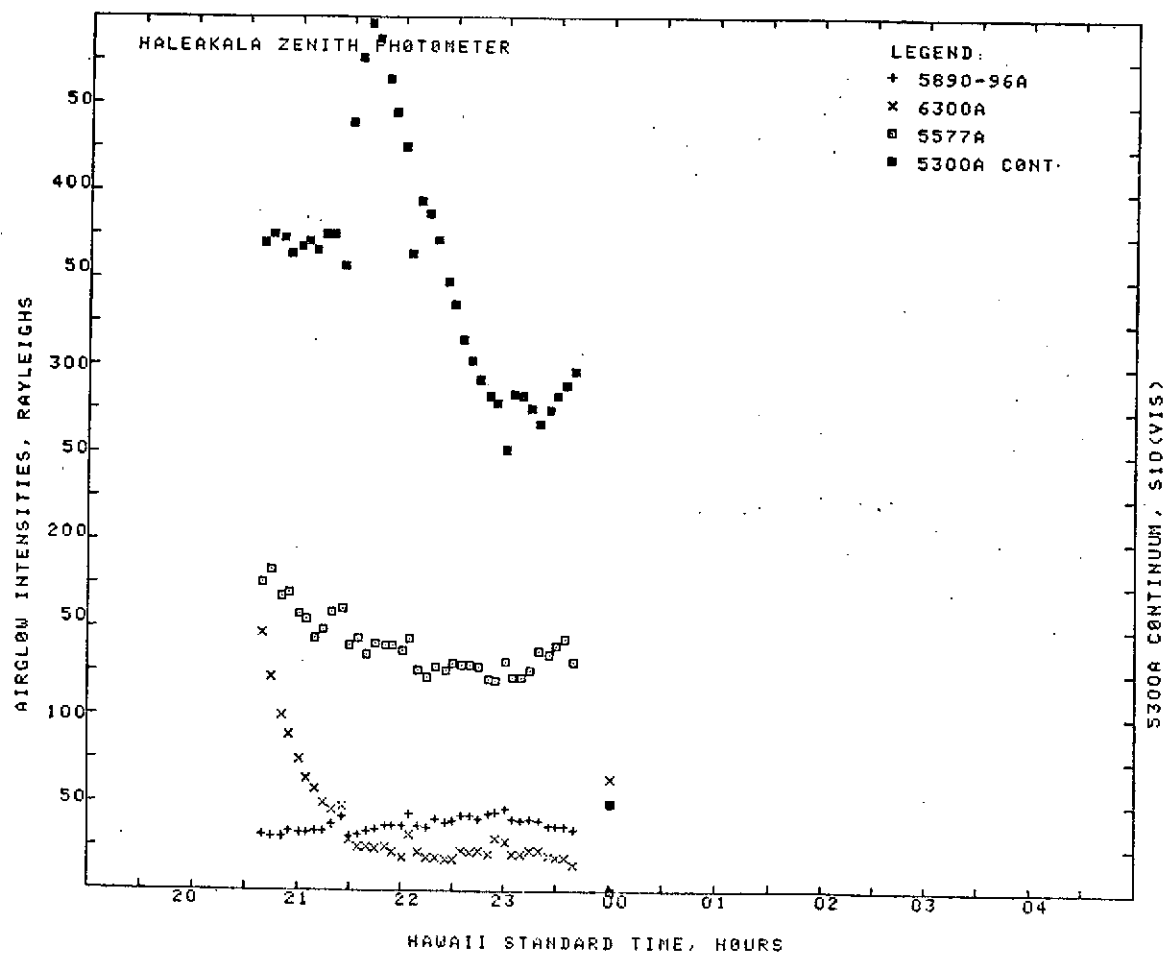




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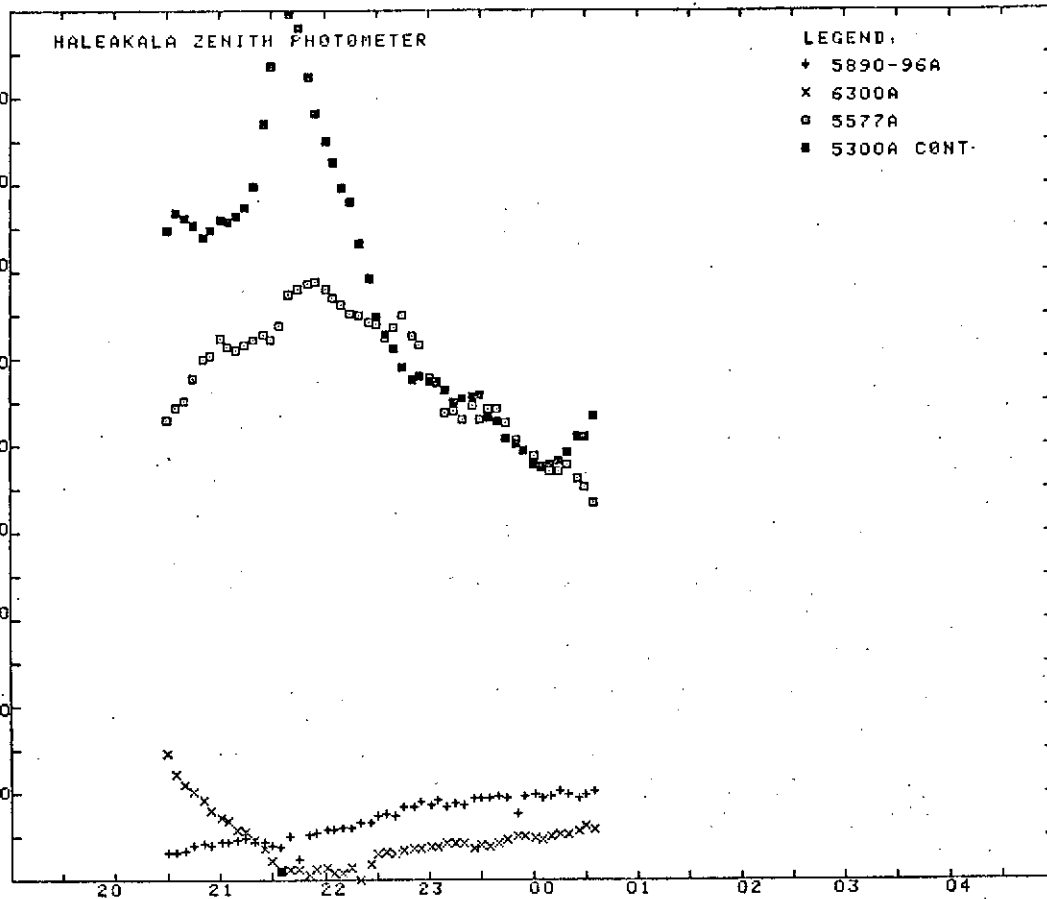


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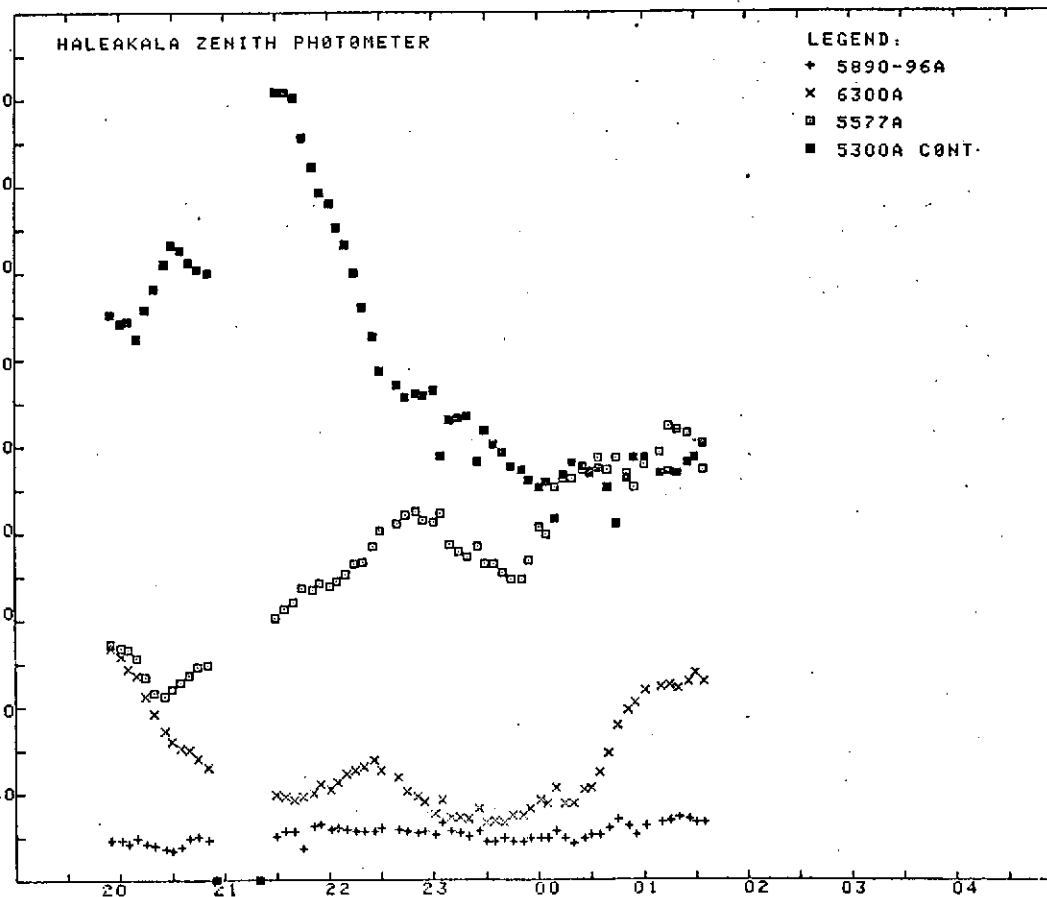
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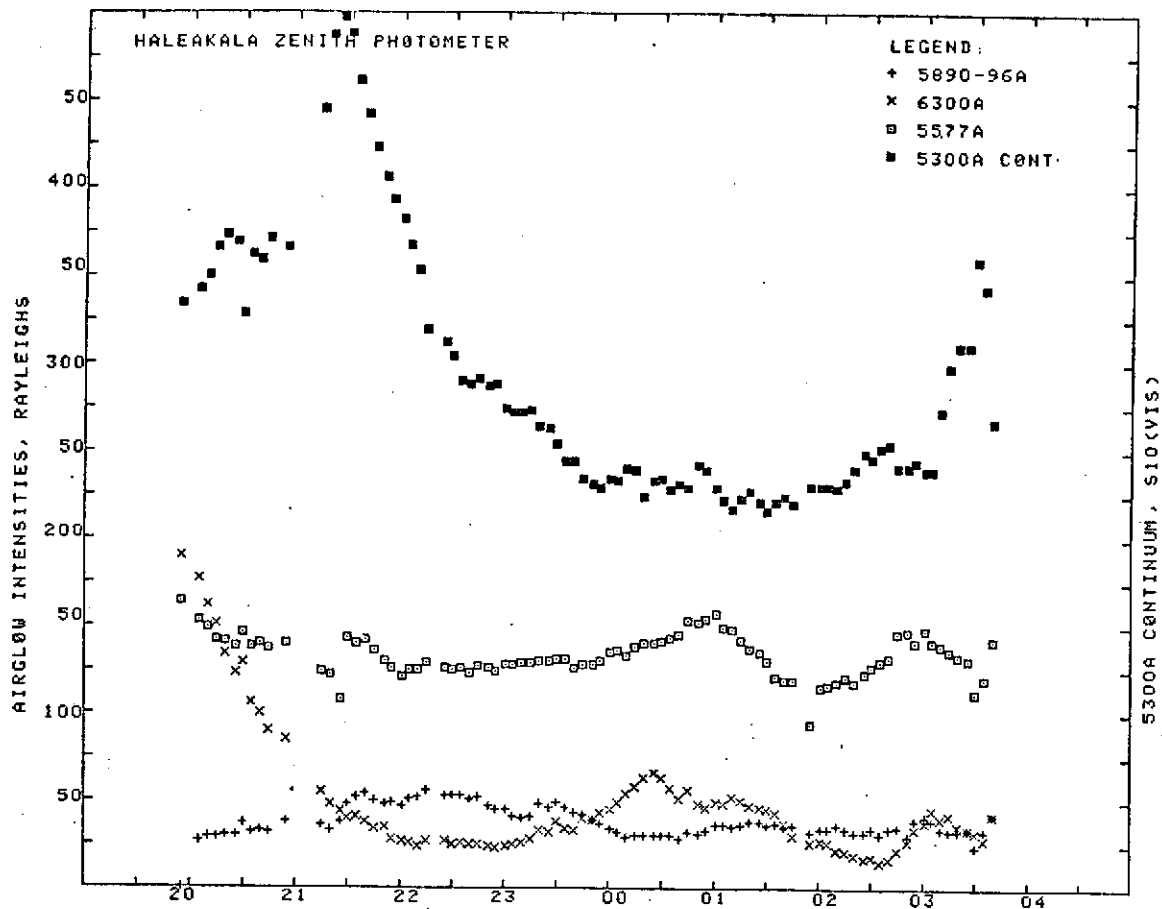
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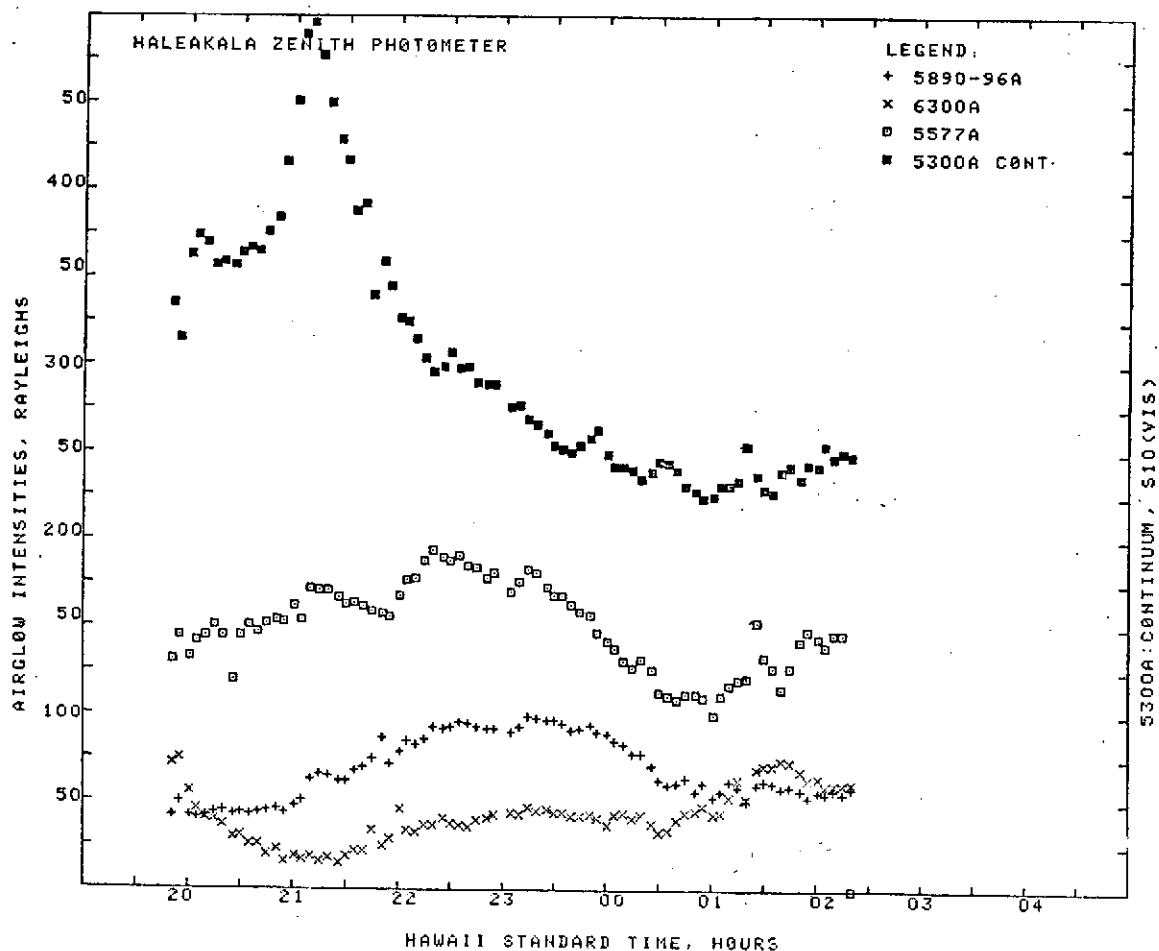
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HAWAII STANDARD TIME, HOURS

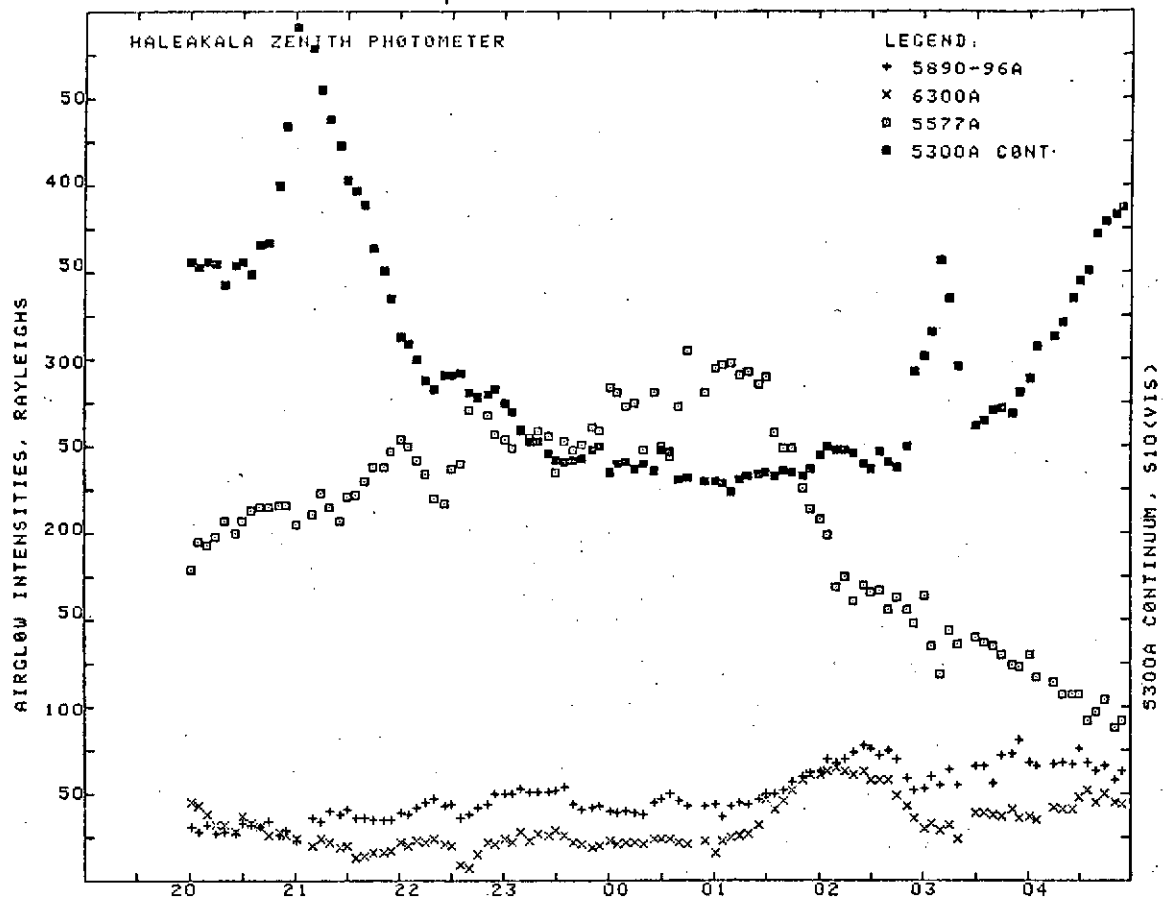
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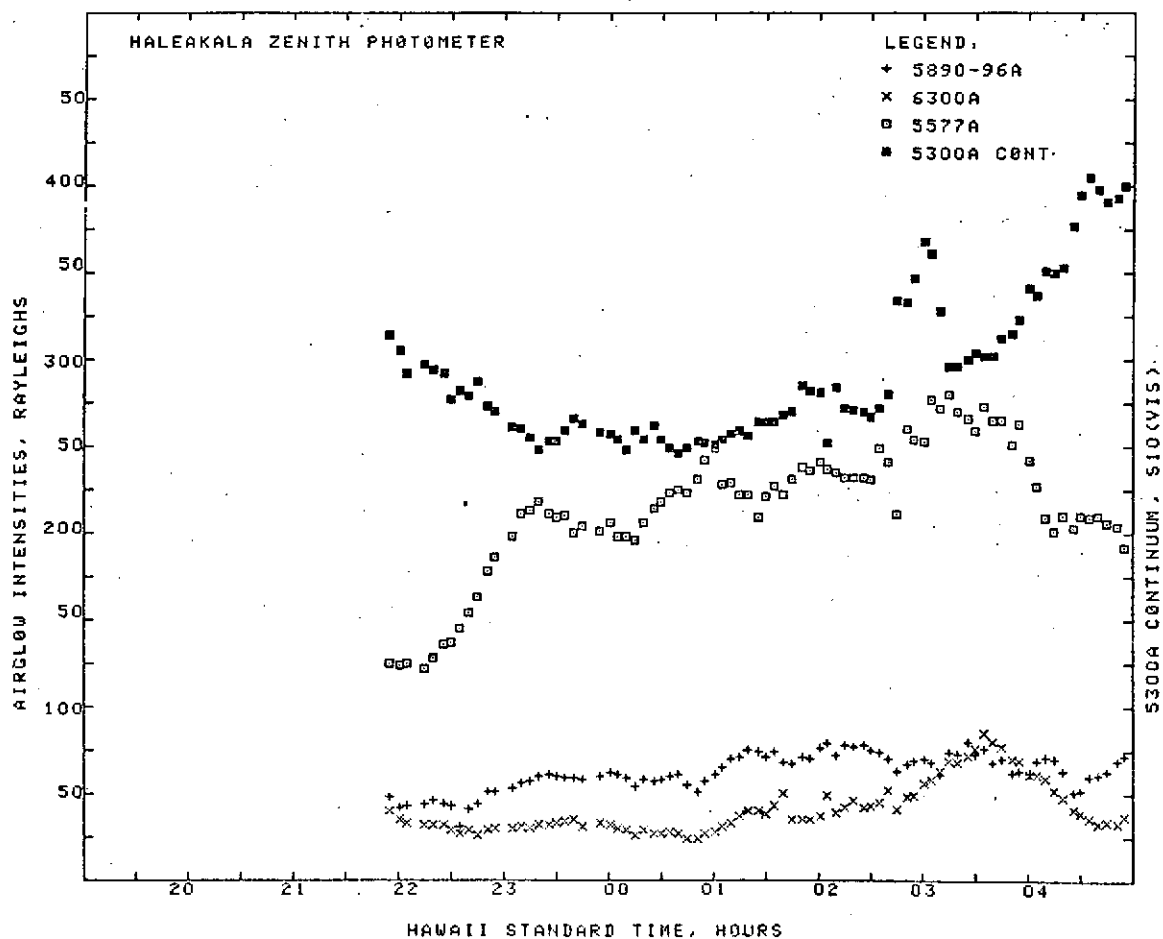
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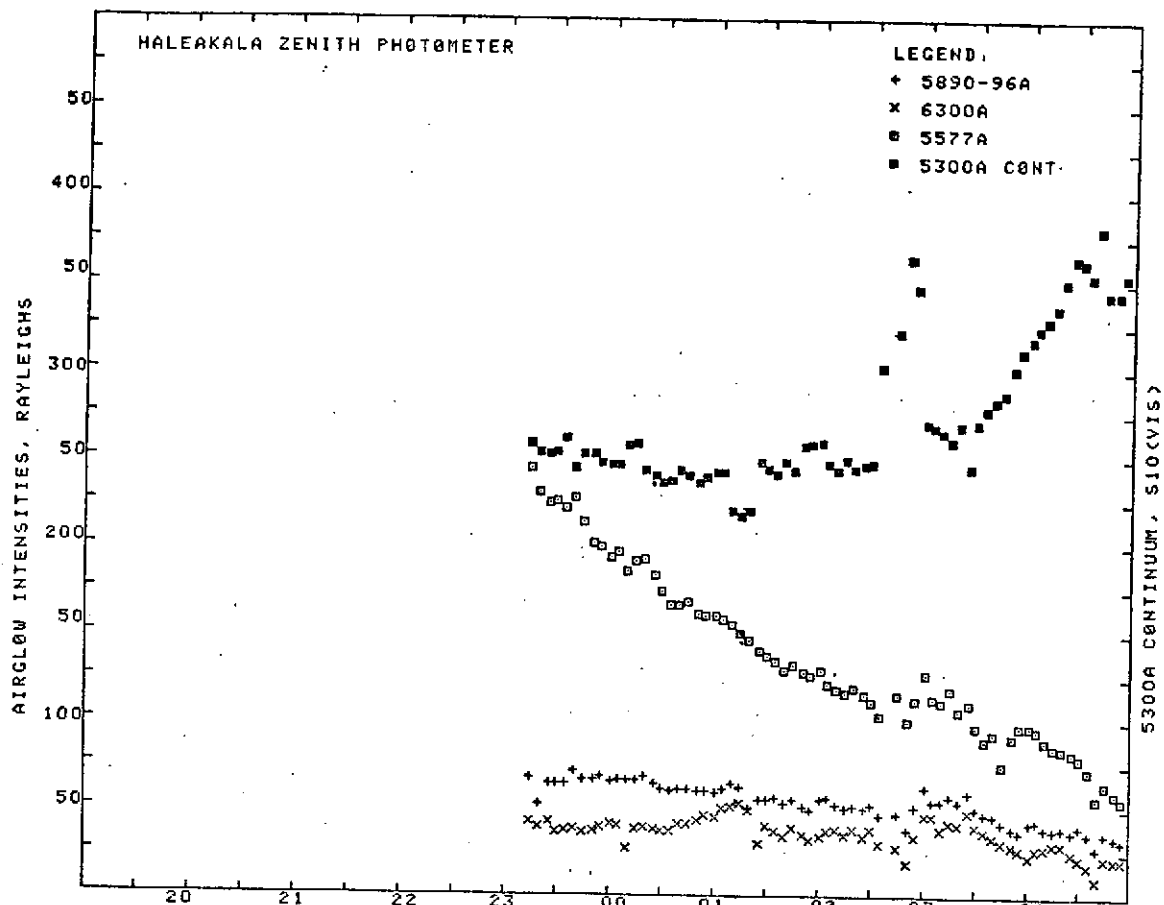
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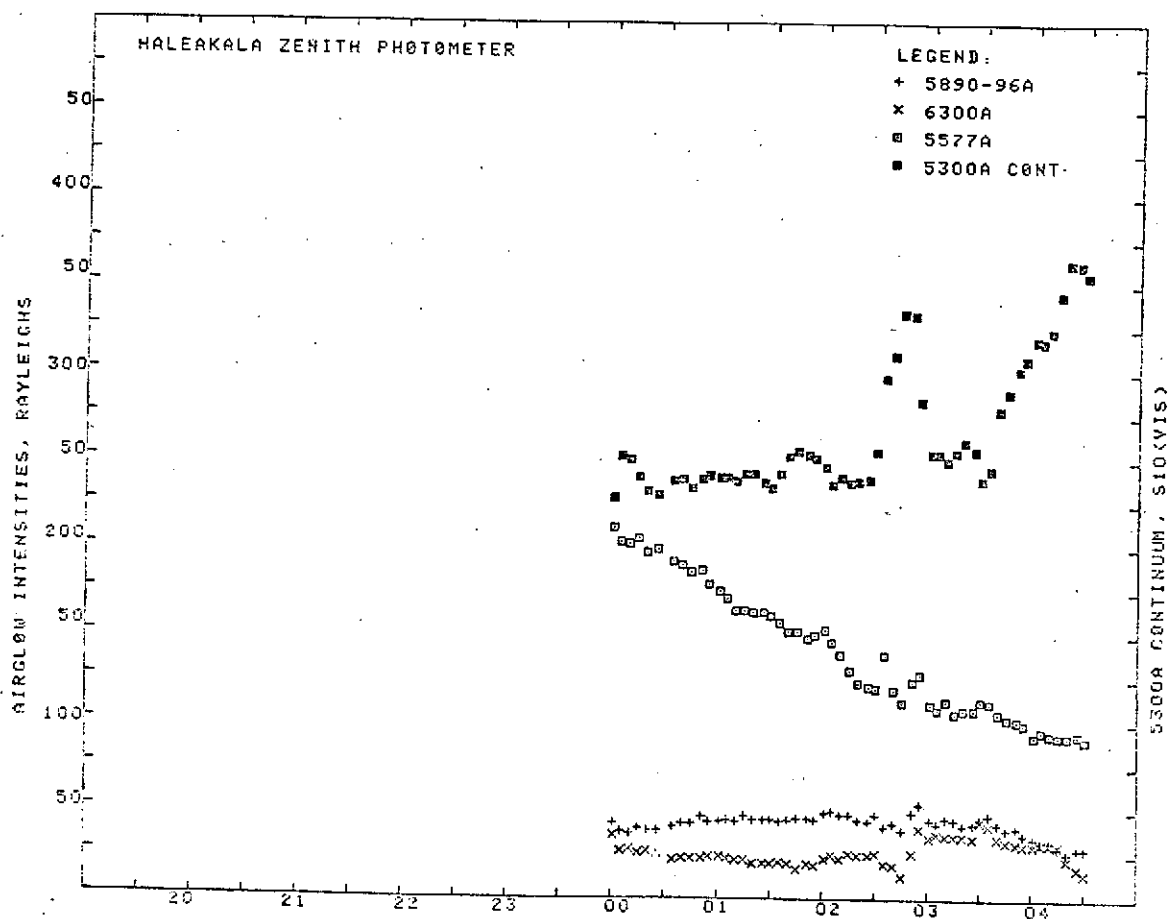
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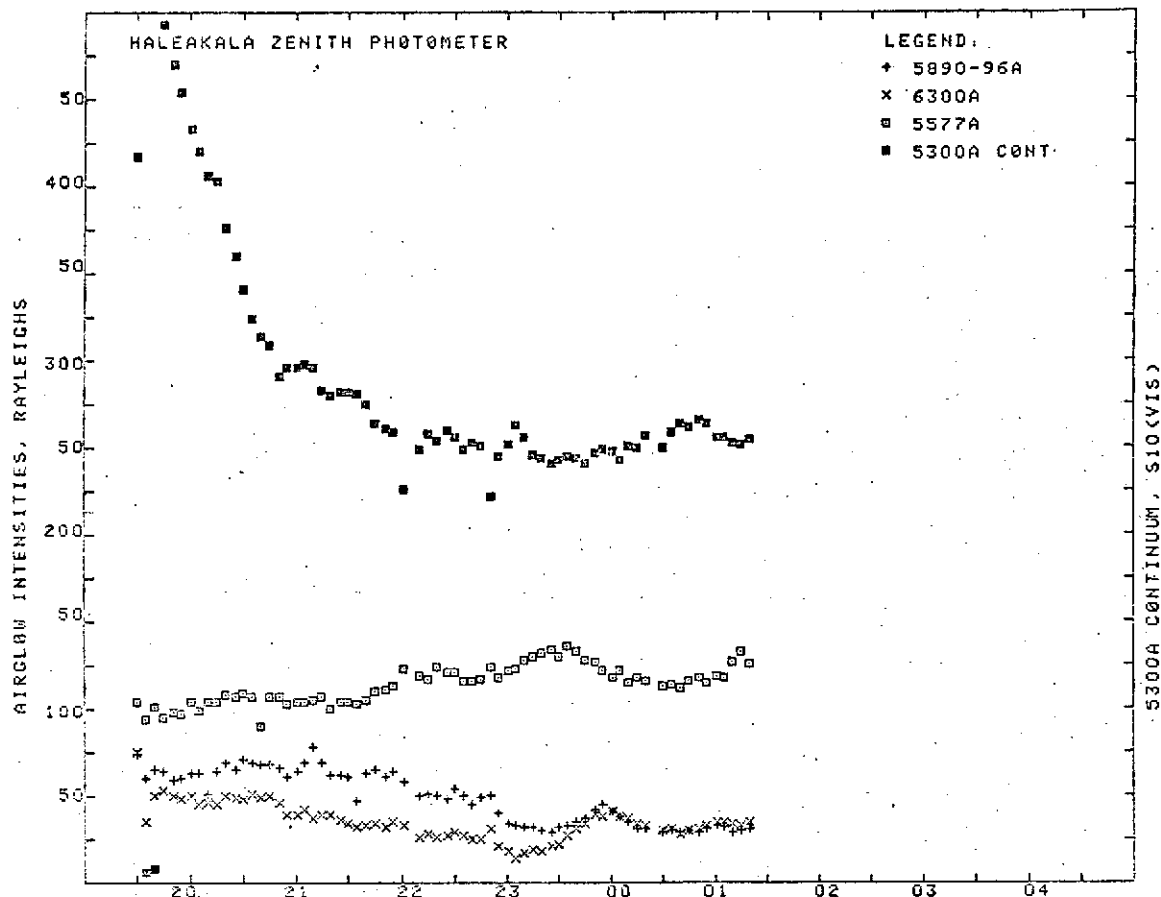


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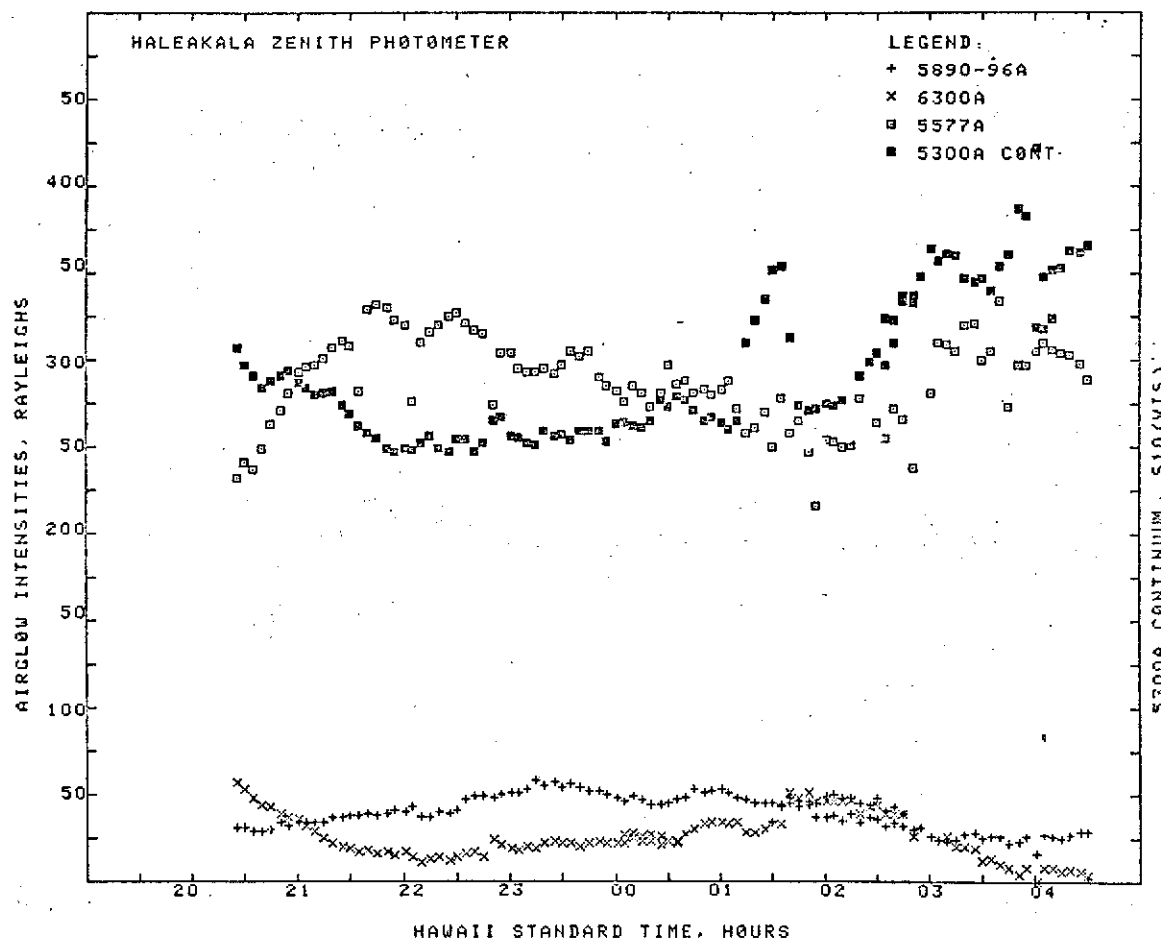


HAWAII STANDARD TIME, HOURS

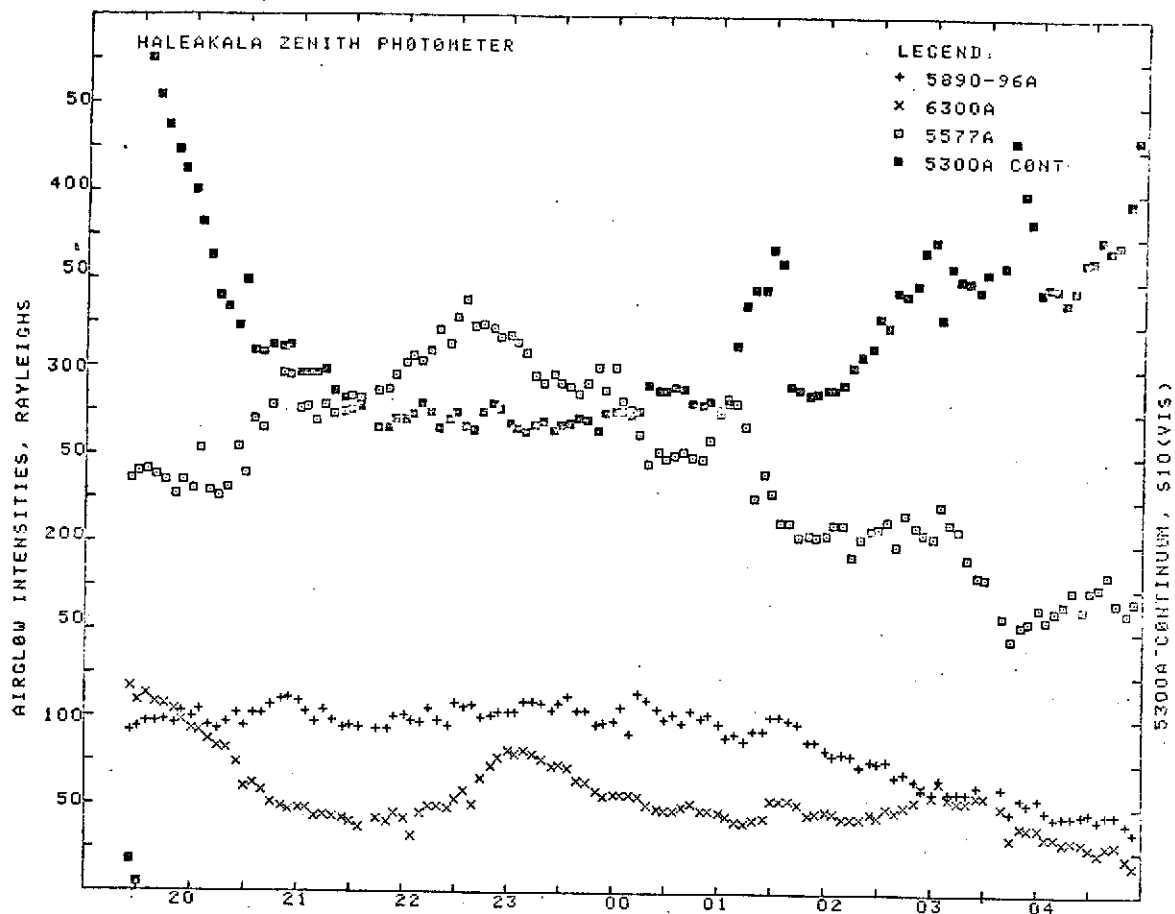
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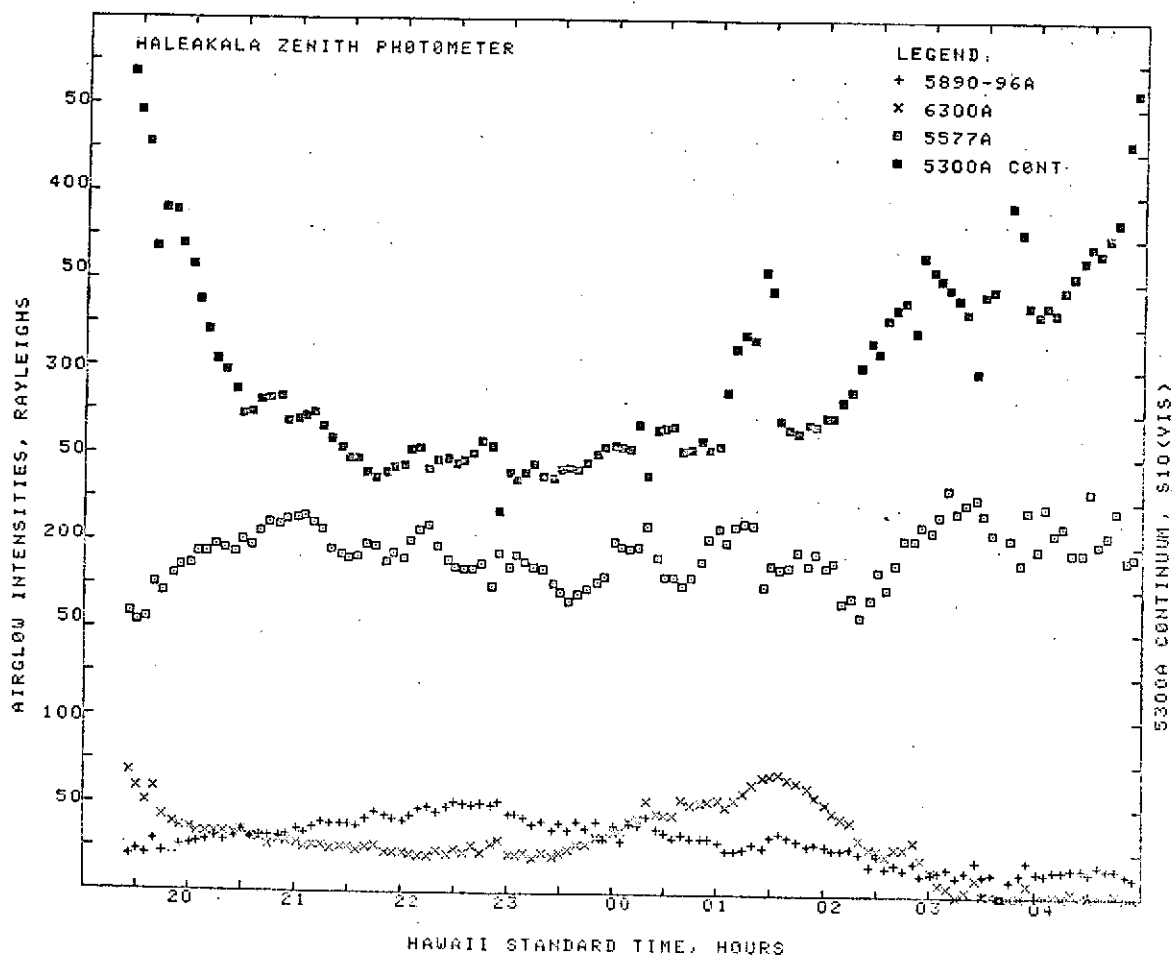
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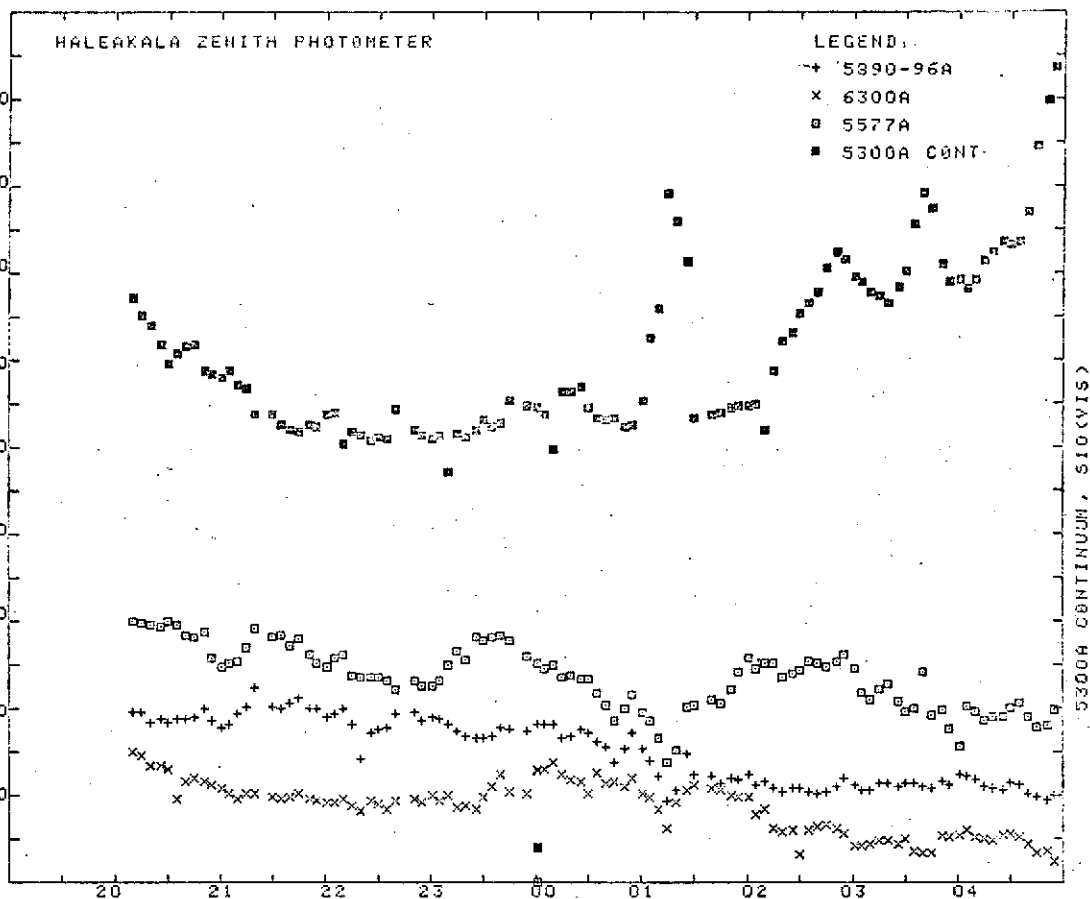


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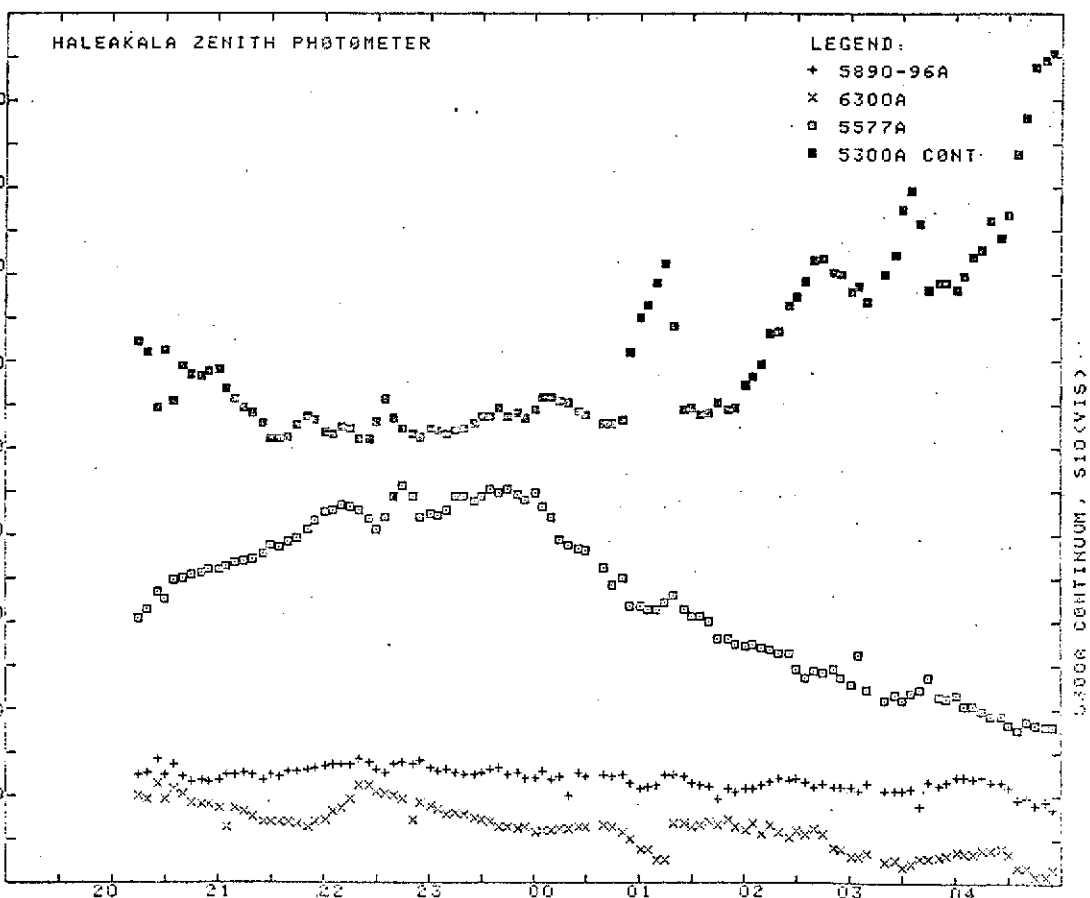
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AIRGLOW INTENSITIES, RAYLEIGHS



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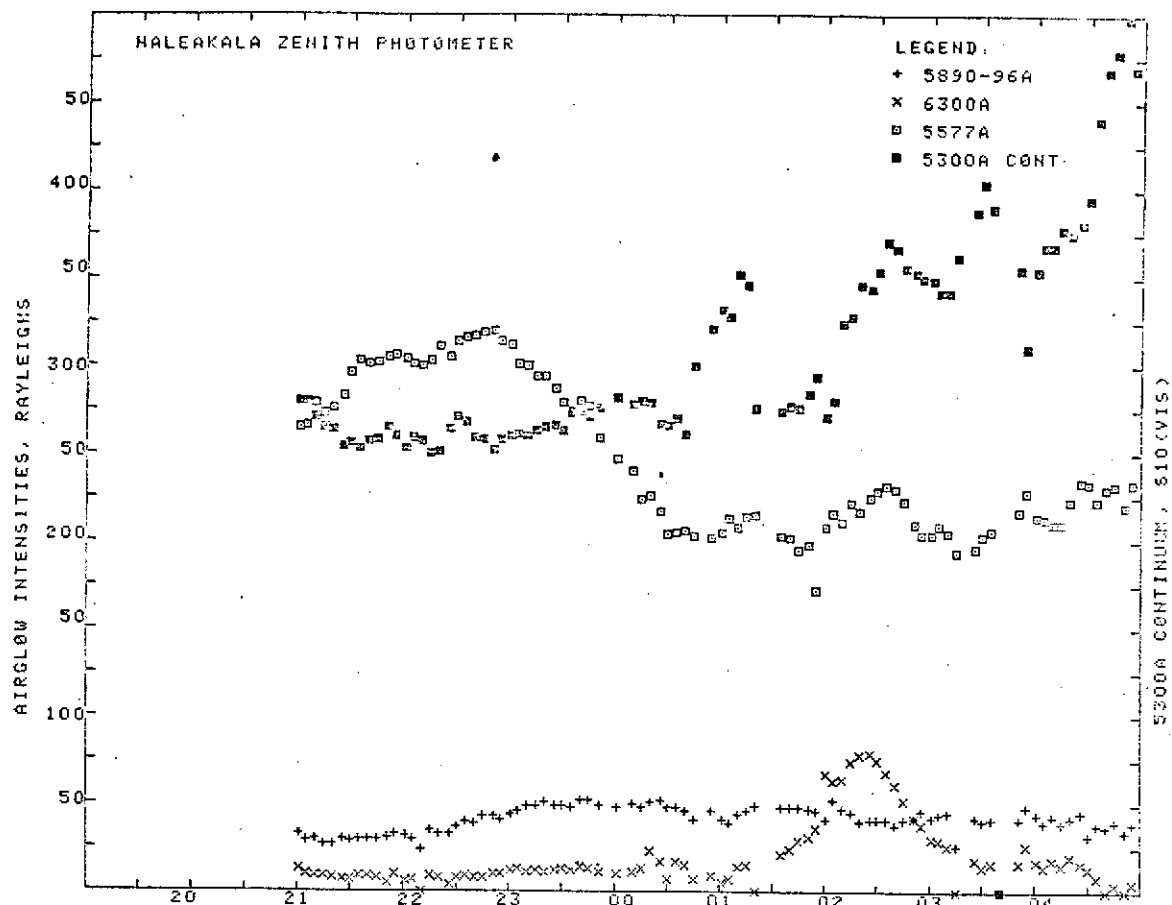
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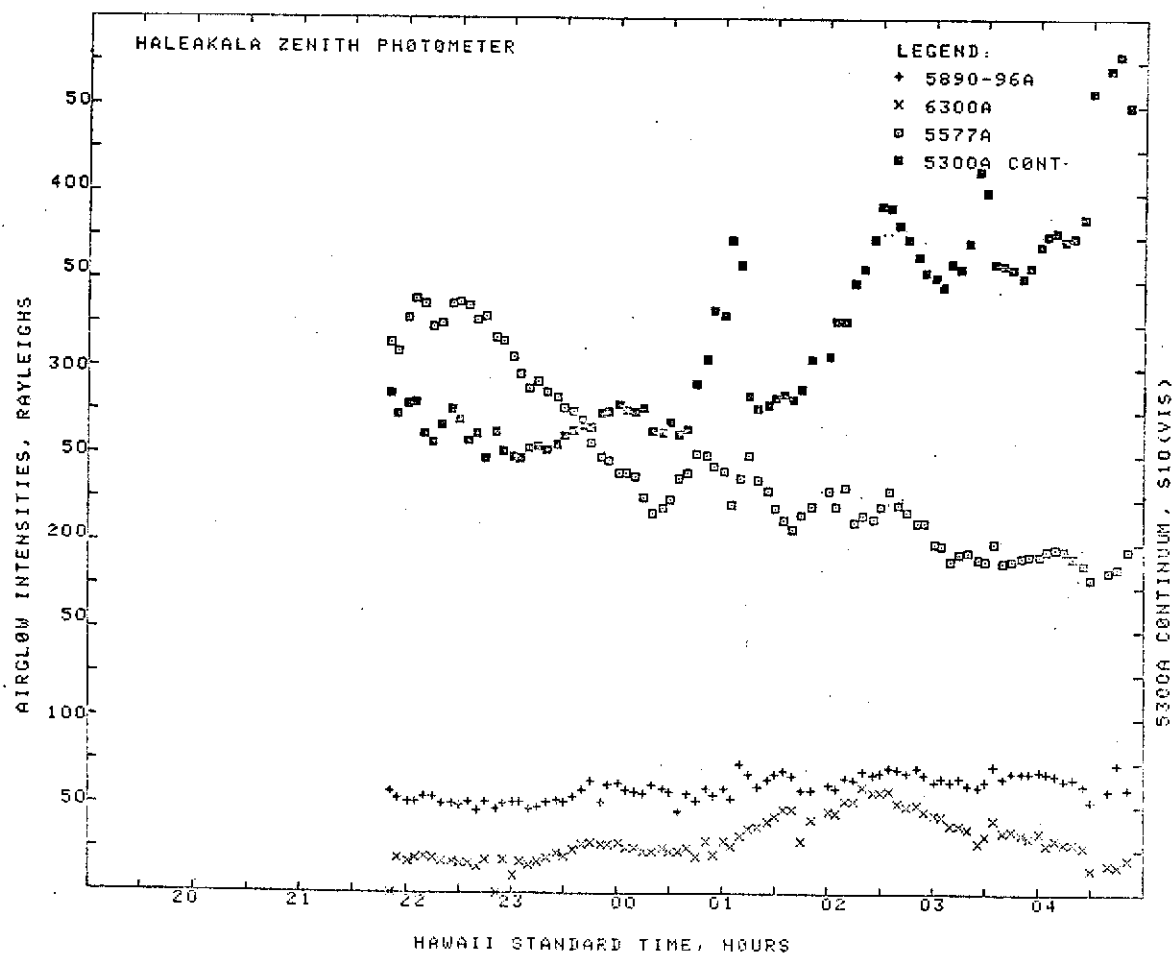
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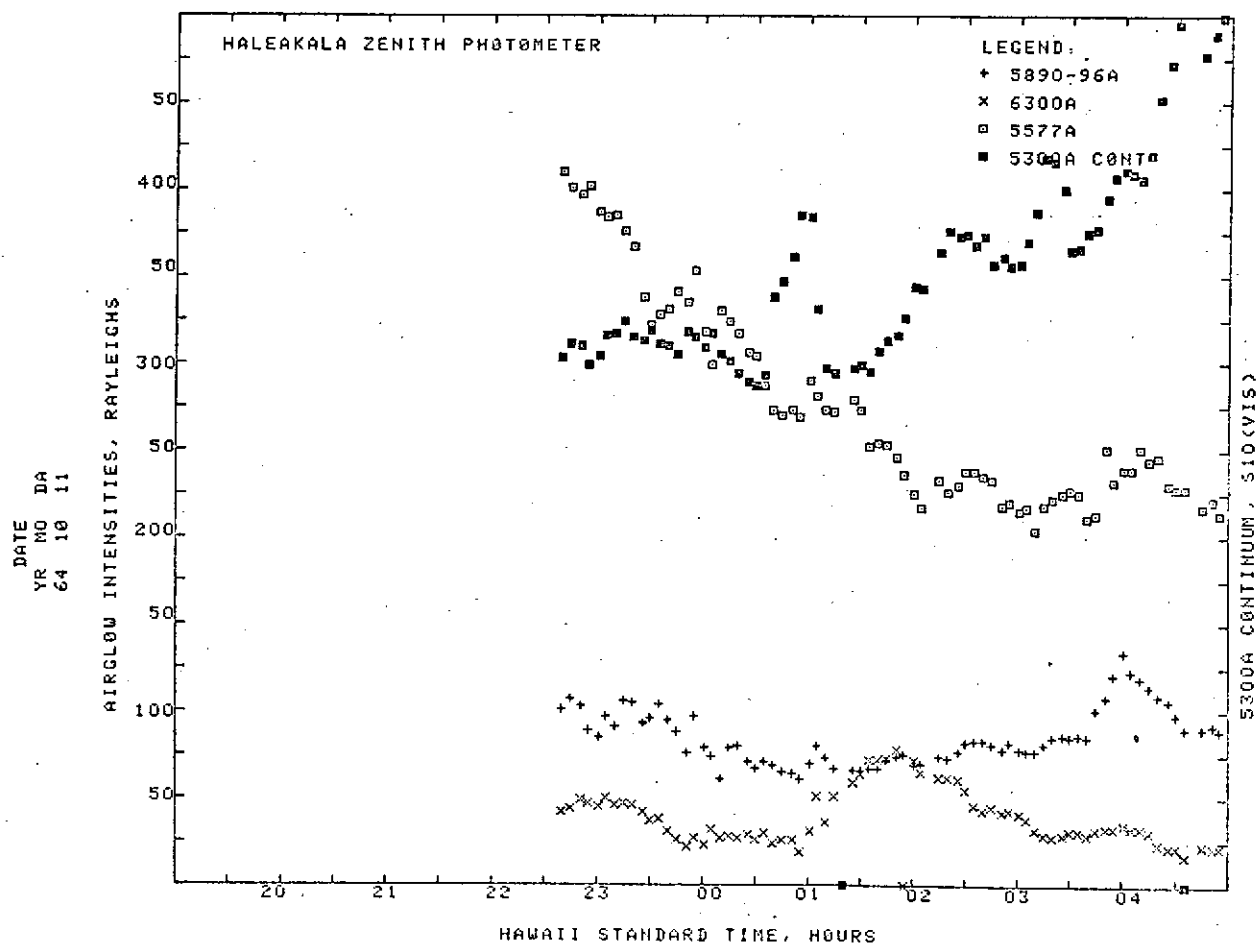
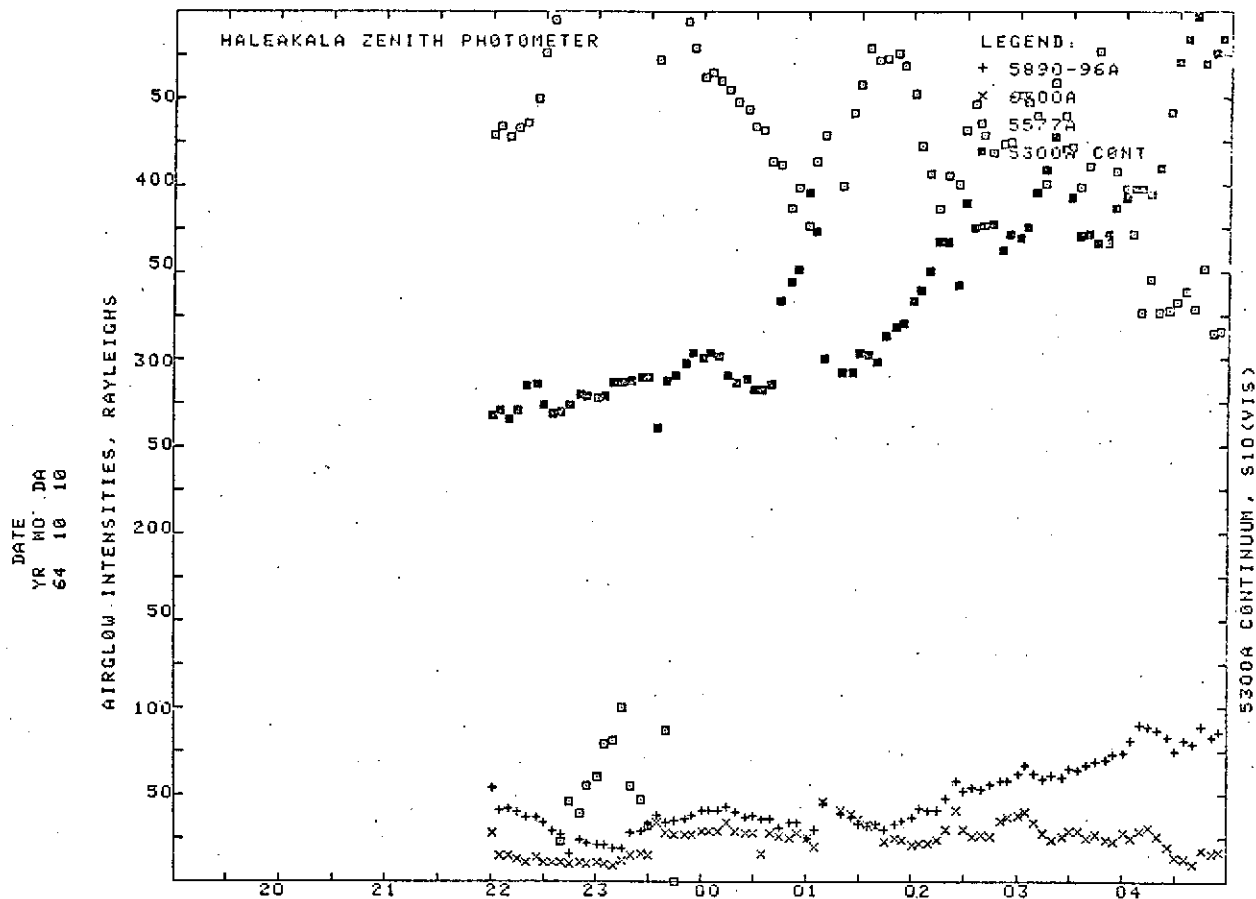


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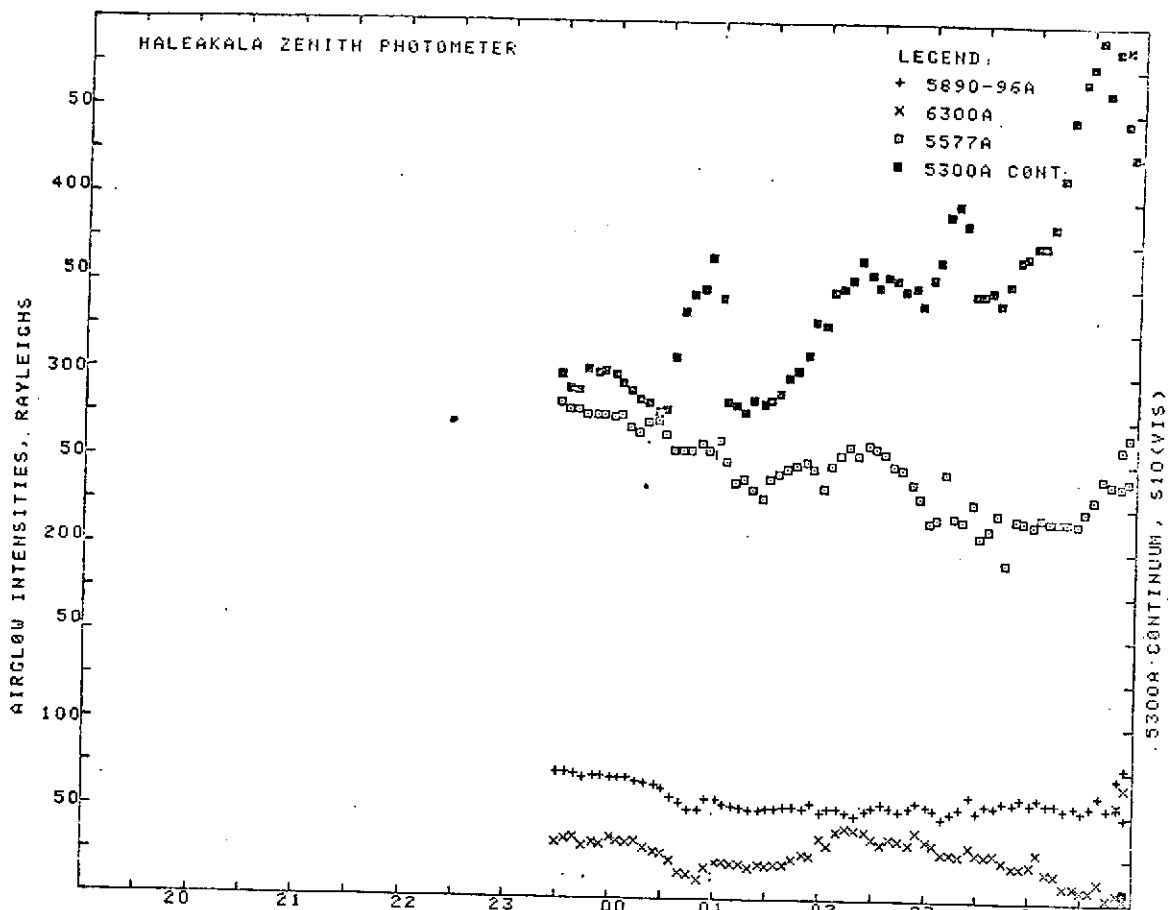


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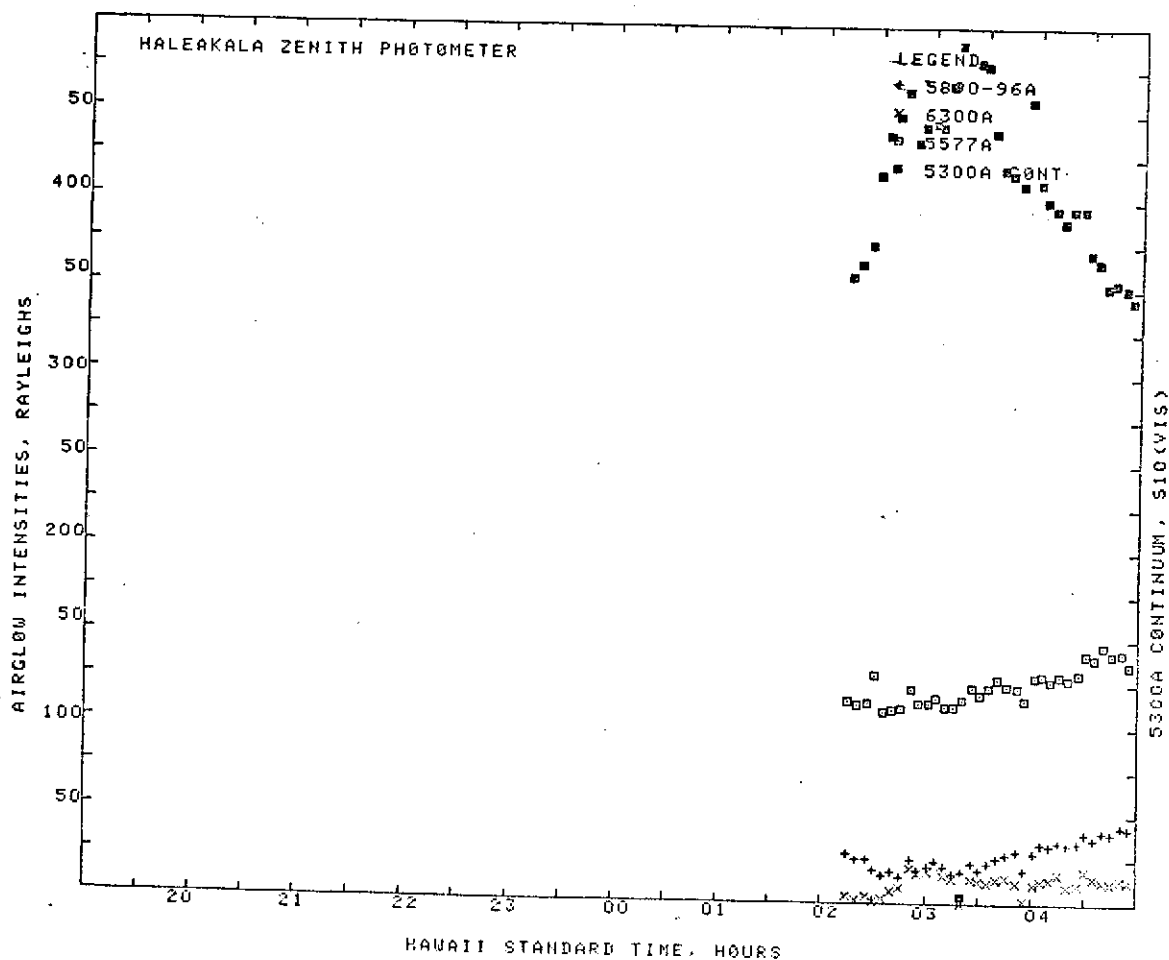




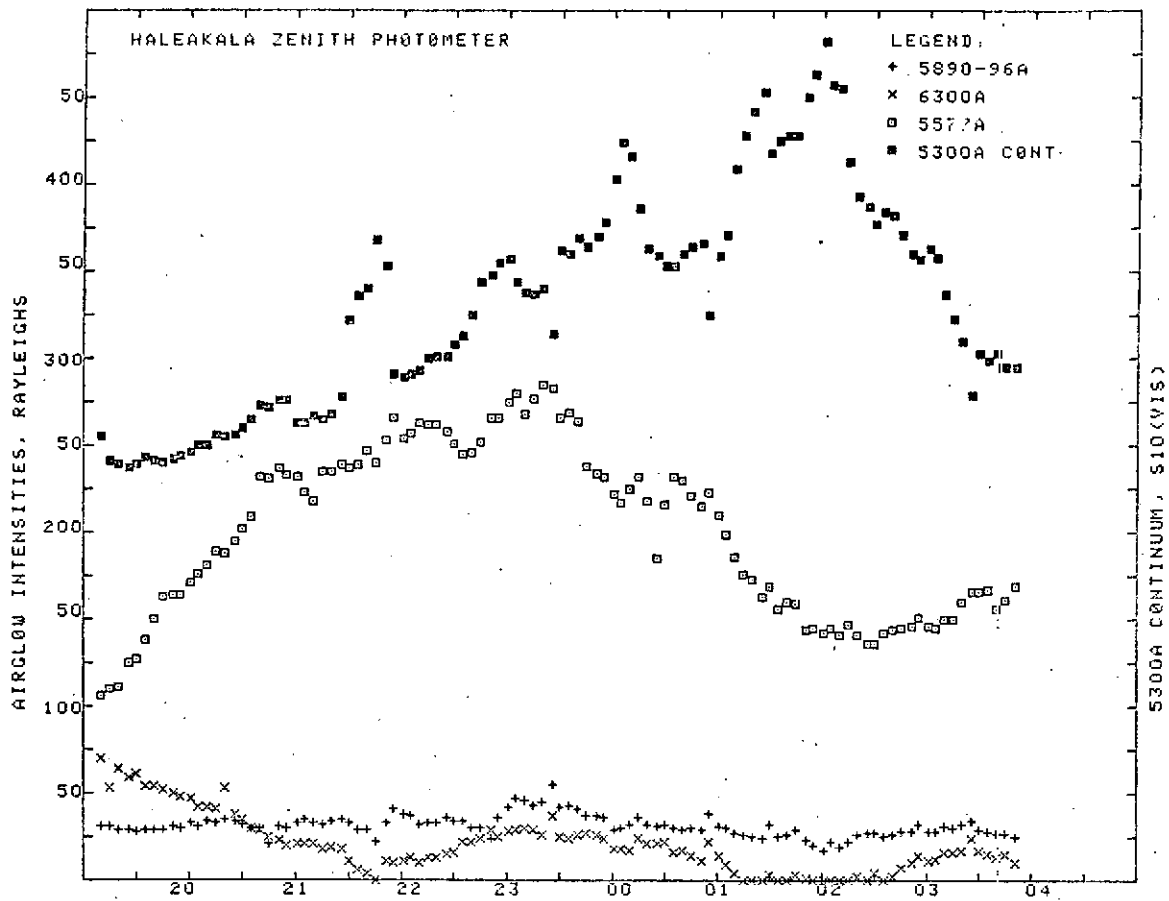
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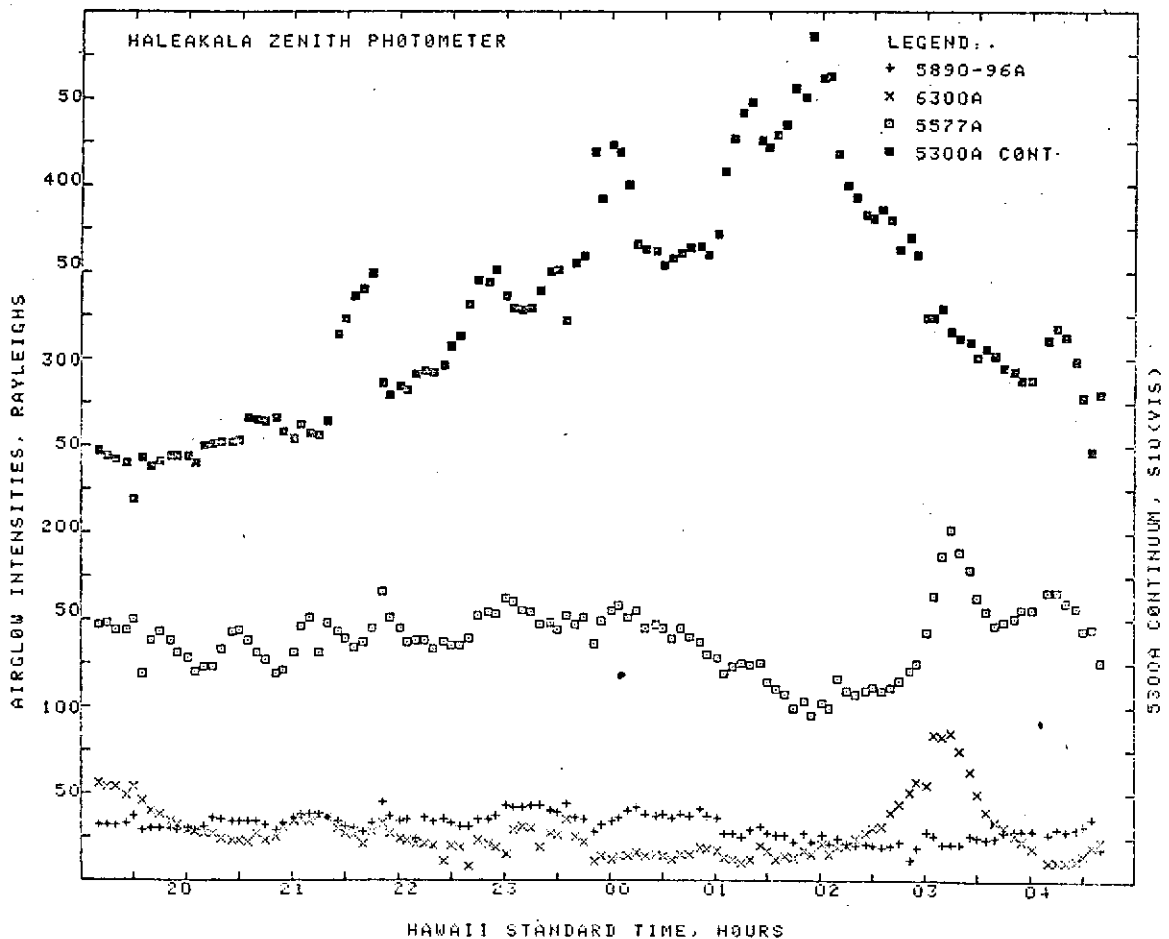
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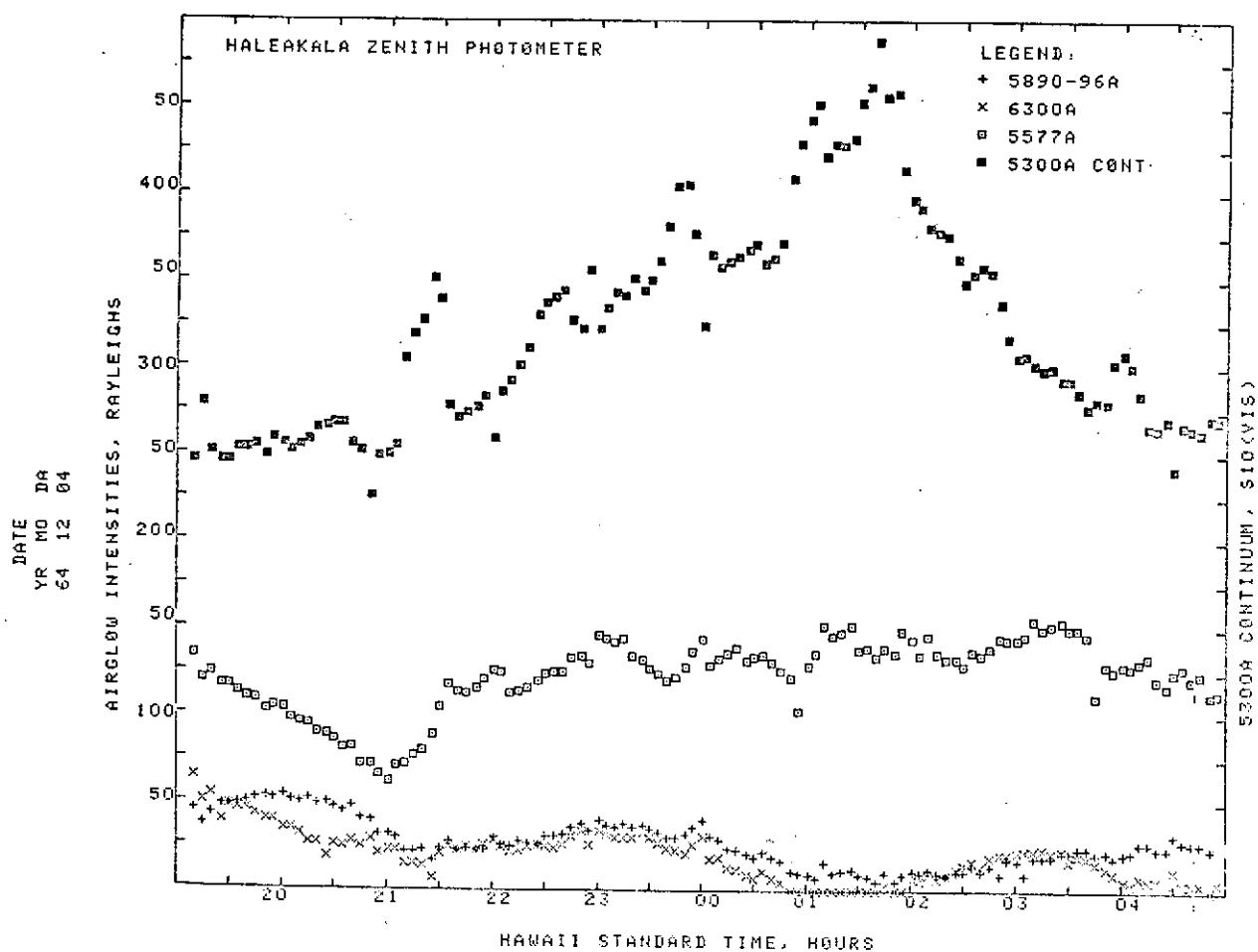
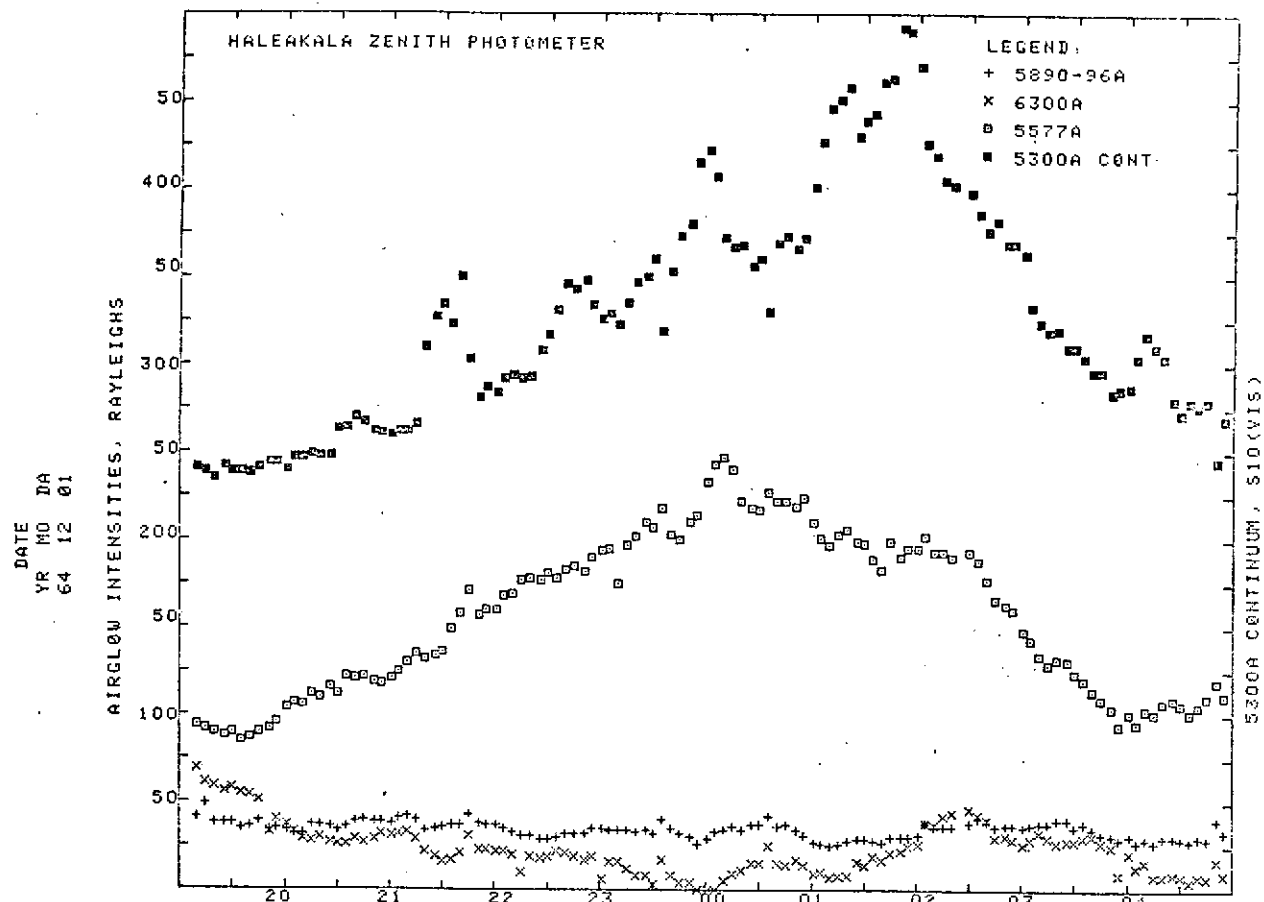


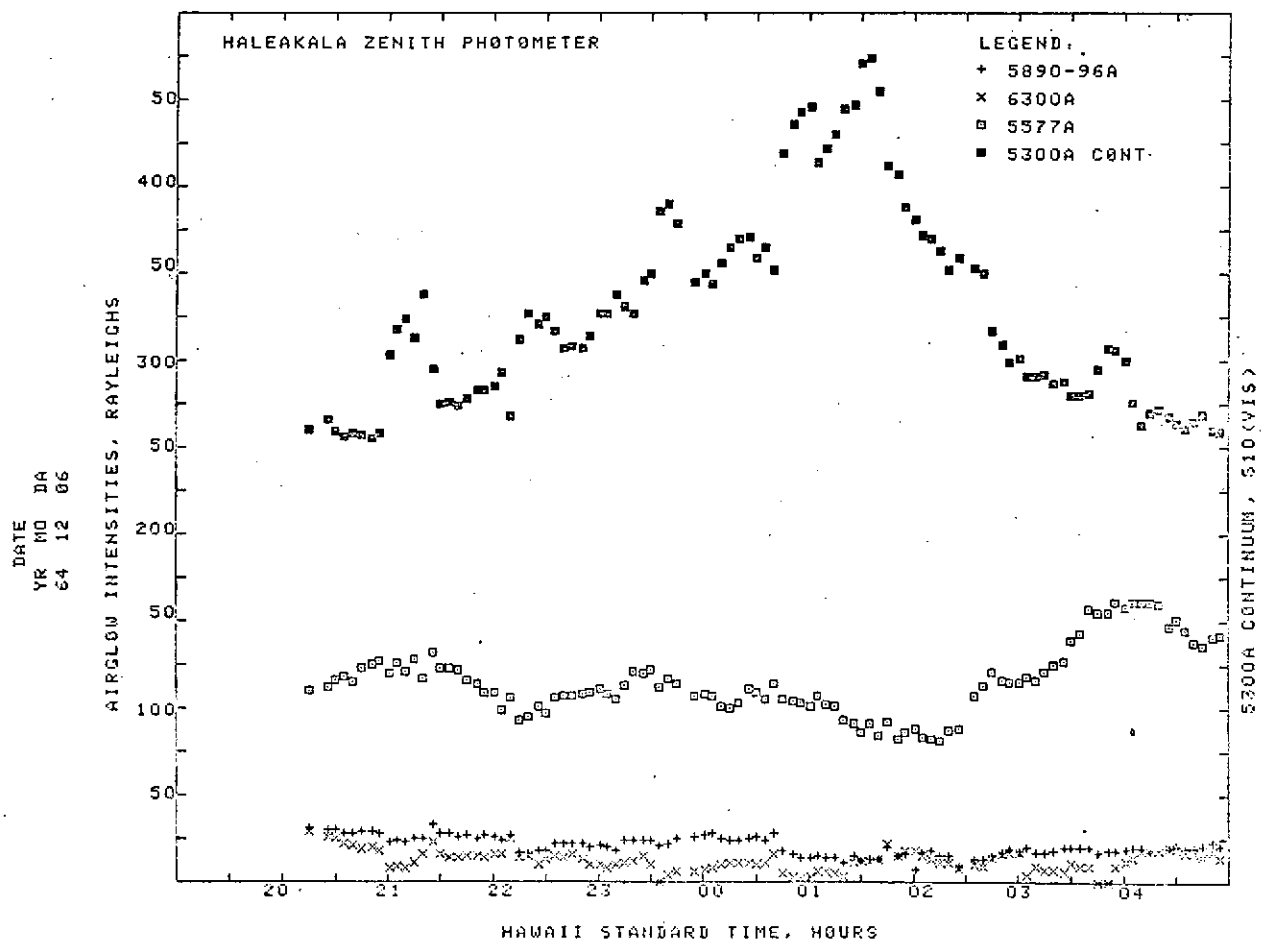
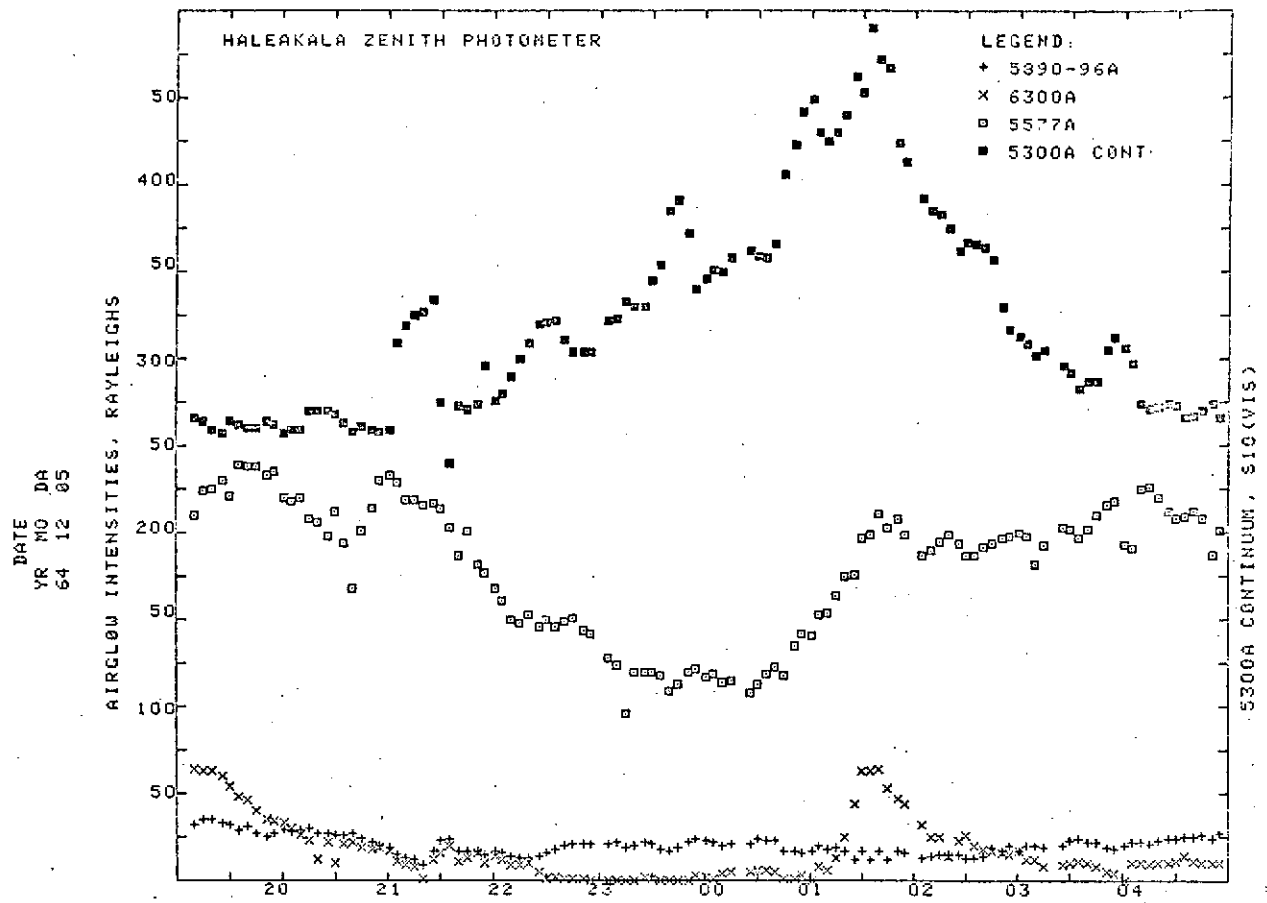
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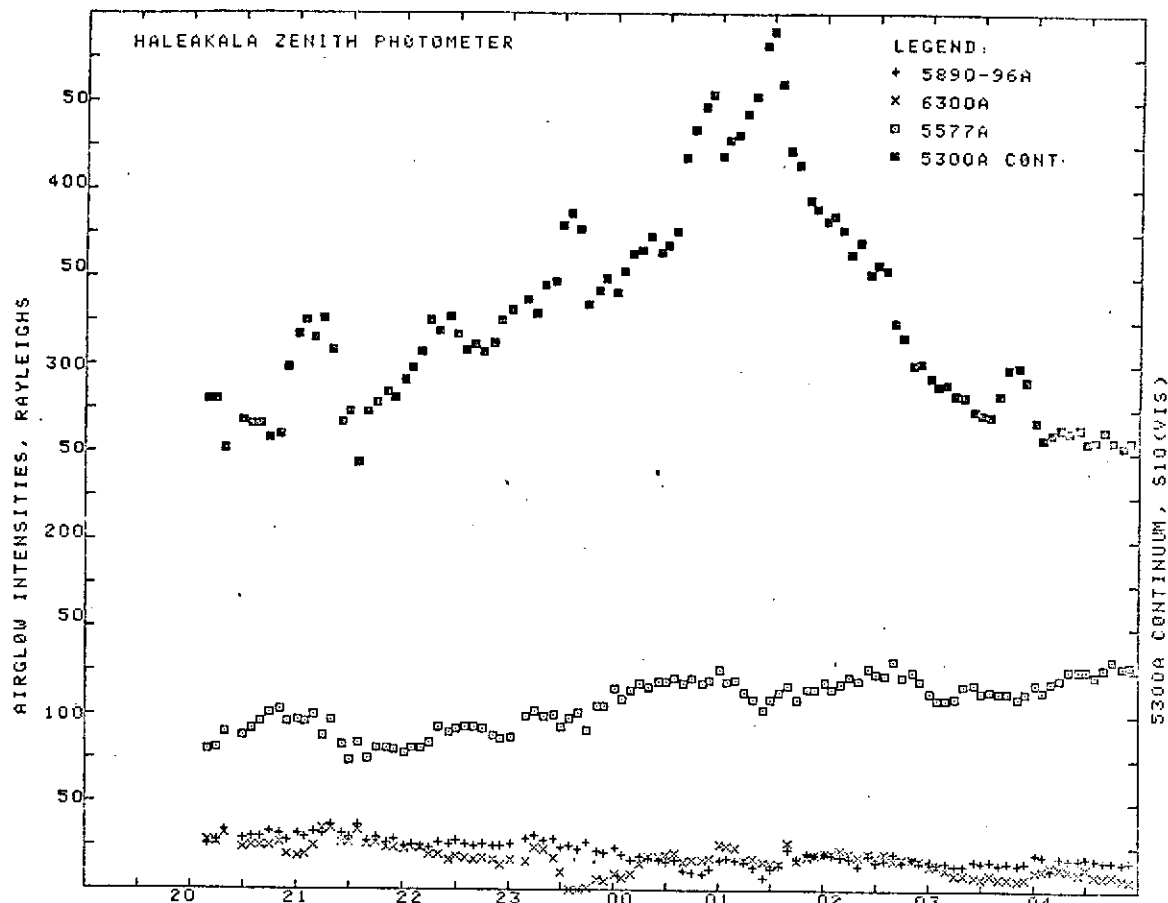
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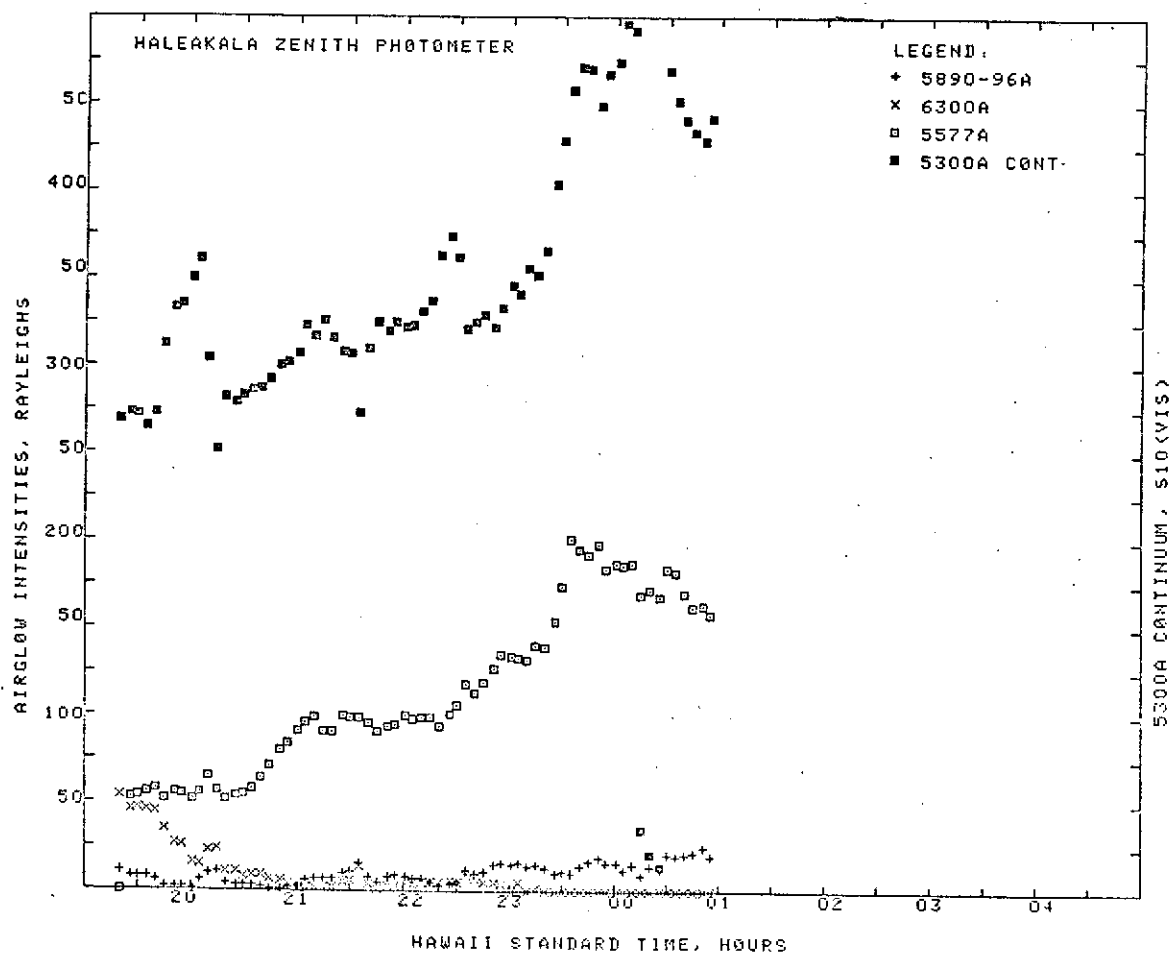


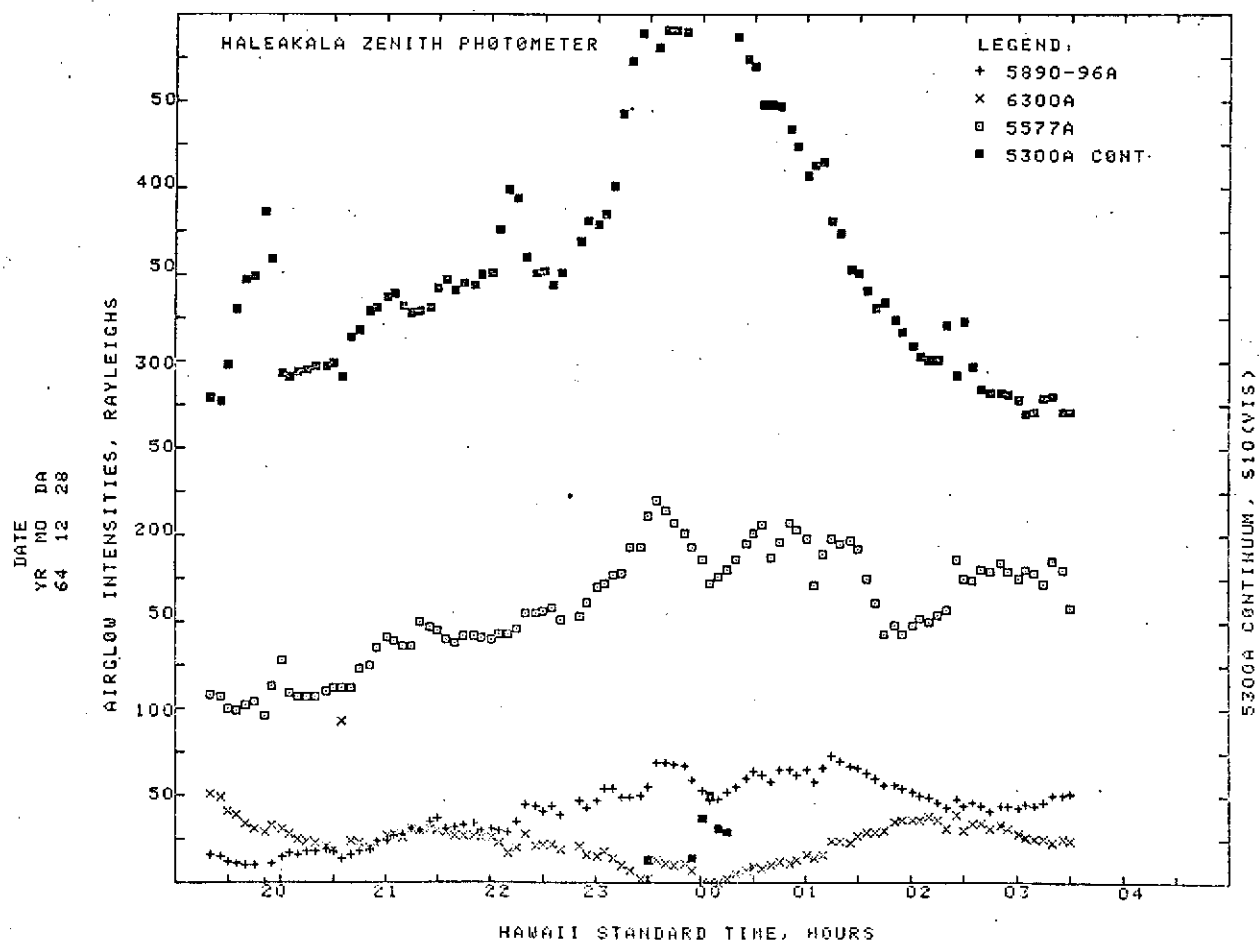
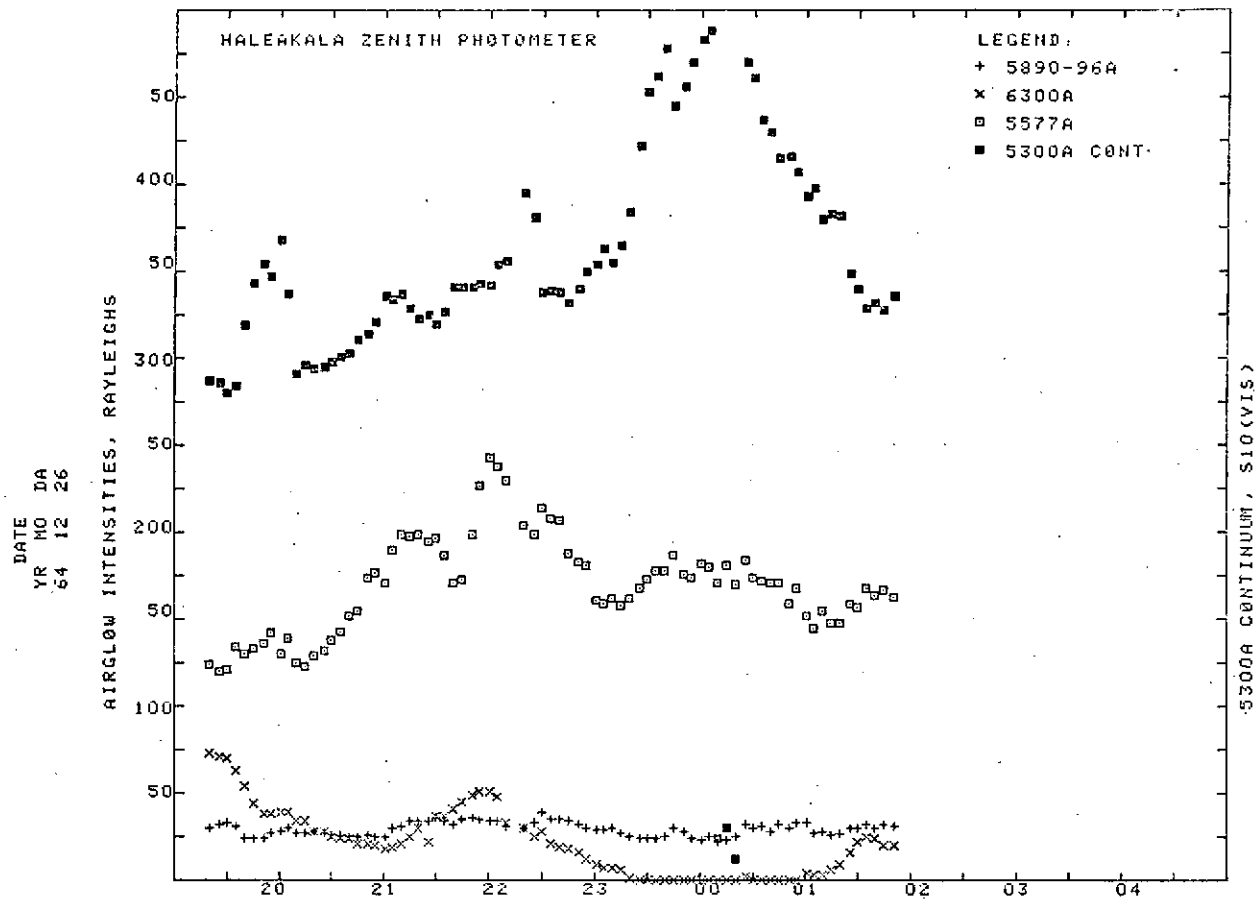


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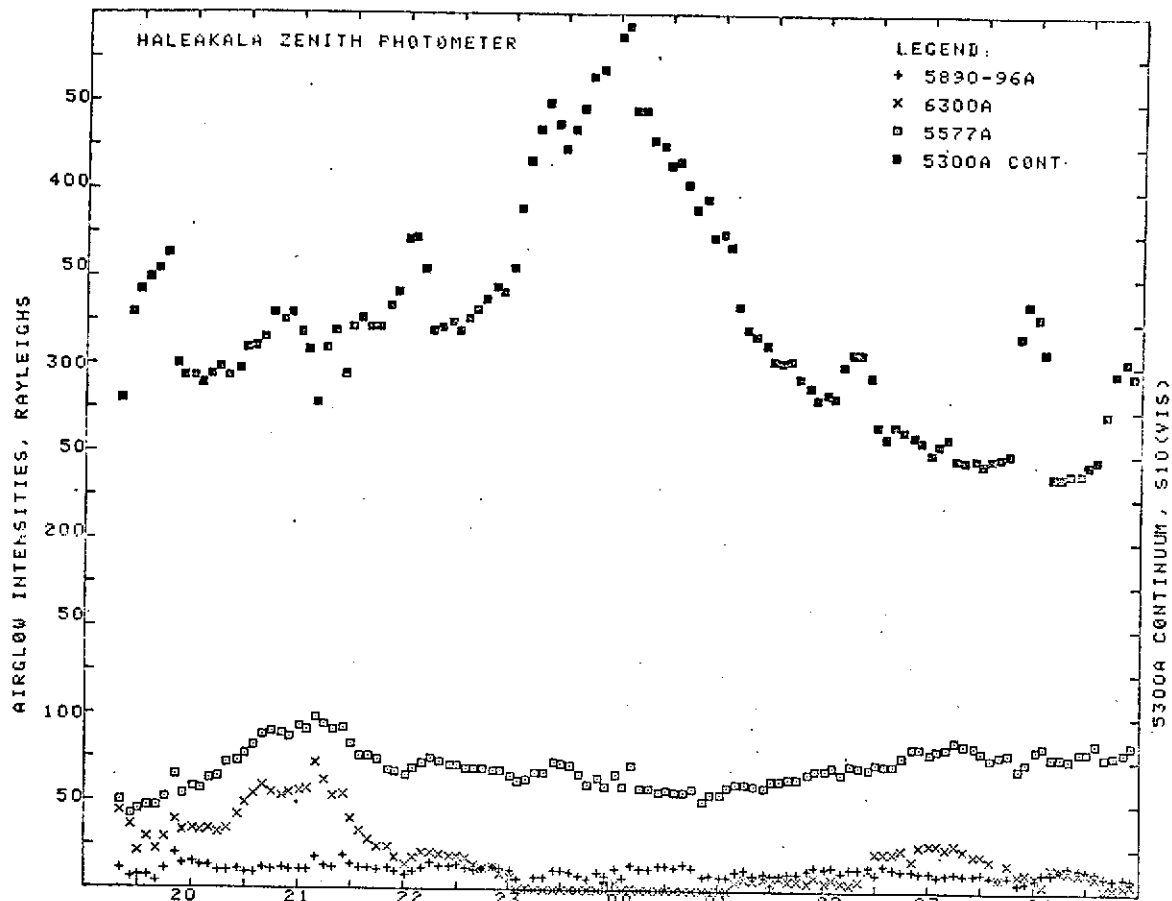
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